

CLASS 623, PROSTHESIS (I.E., ARTIFICIAL BODY MEMBERS), PARTS THEREOF, OR AIDS AND ACCESSORIES THEREFOR

SECTION I - CLASS DEFINITION

This class provides for artificial substitutes or parts for a human body particularly manufactured or adapted to replace or assist a missing or defective natural body member or part thereof for functional or cosmetic reasons. This class also provides for elements or accessories for substitutes or parts of this class unless such elements or accessories are of such general utility as to be provided for in some other class. This class also provides for devices and mechanisms designed to operate or control artificial substitutes or parts for a human body. Finally, this class provides for methods of operating an artificial heart.

- (1) Note. For the purposes of this class, the expression "Prosthesis" and "Artificial body member" may include a natural other than human animal body part which has been treated or modified to produce a different type of replacement body part. For example, a graft usable for arteries, organs or skin which is made from animal intestines or umbilical cords will be found in this class. Such prosthesis involving the use of natural body parts proper for this class are to be distinguished from transplants proper for Class 128. That class provides for organ or tissues taken from a human body for grafting into another area of the same body or into another human body "Class 128 also provides for tissues transplanted from one animal into another when the tissues are unchanged, and used for substantially the same purpose (e.g., a pig's heart when placed into a human to replace the human heart is considered a transplant, not a prosthesis for this class)."
- (2) Note. Stents (devices inserted within a blood vessel or organ intended to keep the vessel or organ from collapsing) are to be classified in Class 623 if the device is to be left in place for any length of time longer than the operation implanting it.
- (3) Note. A filter placed in a vessel or organ is classified in Class 623 if they remain longer than the operation, and in Class 606 if they

are removed before completion of the operation.

- (4) Note. Dilators, are to be placed in Class 606 only if the device is used for holding open the vessel or organ while it is being operated on (i.e., for the duration of the operation), and then removed.
- (5) Note. Stents for body orifices (e.g., nasal, rectal, throat, etc.) will be classified in Class 606.
- (6) Note. Occluders, devices for blocking the normal flow of fluids through a vessel, are classified in Class 606.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

With regard to Class 128, Surgery, the subject matter found in Class 623 is intended to physically replace (completely or partially) a missing or defective natural body member or part thereof while Class 128 provides for subject matter which may control or assist a body part or function but which is not used as a physical replacement or partial replacement for any normally existing body part. Class 623, for example, provides for sphincter type apparatus which is completely or partially substituted for an existing sphincter type muscle while Class 128 provides for sphincter type apparatus which is used in addition to an existing sphincter type muscle or in a location where no such muscle normally exists.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

- 2, Apparel, appropriate subclasses for pads to be worn under the clothing.
- 8, Bleaching and Dyeing: Fluid Treatment and Chemical Modification of Textiles and Fibers, subclass 94.1 for treatment of hides, skins, feathers, and animal tissues.
- 29, Metal Working, subclass 33 for plural diverse manu apparatus with means for metal shaping or assembling, subclass 402.01 for repairing processes, subclass 419.1 for shaping fiber or fibered material processes, subclass 428 for assembling or joining processes, subclass 469.5 for metal deforming with nonmetallic

- bonding processes, subclass 592 for method of mechanical manufacture, subclass 700 for assemble or disassemble means, subclass 705 for assemble or disassemble means having means to test work or product, subclass 888 for fluid pump making, and subclass 890.12 for valve making.
- 36, Boots, Shoes, and Leggings, subclass 140 for devices accommodating shoes to foot deformities and remaining in the shoe upon removal of the shoe from the foot.
- 72, Metal Deforming, appropriate subclasses for means to bend or work with metal.
- 73, Measuring and Testing, appropriate subclasses for measuring and testing devices.
- 83, Cutting, appropriate subclasses for cutting general tools.
- 106, Compositions: Coating or Plastic, subclass 13 for fog, frost, or ice preventive compositions.
- 119, Animal Husbandry, subclasses 712+ for a harness for controlling or handling an animal, subclasses 850+ for a protective shield or apparel, and subclasses 856+ for a body- or appendage-encircling collar or band.
- 128, Surgery, appropriate subclasses for apparatus which controls or assists a body part or function but does not physically replace or partially replace any normally existing body part and subclass 898 for general surgical methods which do not involve a step of manipulating a specific structure of the prosthetic device.
- 132, Toilet, subclass 53 and 54 for wigs and other hair structures not anchored in the scalp.
- 135, Tent, Canopy, Umbrella, or Cane, subclasses 65+ for staffs, crutches, stilts, etc. used as aids to walking but not adapted to be secured to the limbs.
- 137, Fluid Handling, appropriate subclasses for valves.
- 181, Acoustics, subclasses 129+ for an artificial ear drum or aid to hearing.
- 206, Special Receptacle or Package, subclass 438 for packaging for body treatment article.
- 223, Apparel Apparatus, appropriate subclasses, especially 60, 66+ and 120 for artificial body members used for display or in operations on apparel.
- 228, Metal Fusion Bonding, subclass 101 for metal fusion bonding processes, subclass 141.1 for metal fusion processes with shaping, and subclass 175 for plural diverse bonding processes.
- 249, Static Molds, appropriate subclasses for molding devices for lens.
- 251, Valves and Valve Actuation, appropriate subclasses for valves with activating means.
- 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclass 1.1 for optical article shaping or treating; subclass 129 for methods of shaping or treating plastic article with printing or coating of work piece; and subclass 241 for mechanical shaping or molding to produce composite, plural parts or multi-layered article.
- 351, Optics: Eye Examining, Vision Testing and Correcting, subclass 41 for spectacles and eyeglasses as aids to vision; subclass 160 for eye contact lens, subclass 161 for multifocal eye contact lens, subclasses 170 and 175 for eye contact lens with prismatic segment or part, and subclass 176 for eye contact lens with focus and/or astigmatism correction means.
- 356, Optics: Measuring and Testing, subclass 357 for measuring or testing a dimension or optical configuration by light interference.
- 359, Optics: Systems (Including Communication) and Elements, subclass 642 for lens, subclass 652 for lens with graded refractive index, subclass 678 for prism lens type, subclass 707 for diffusing lens, subclass 721 for plural focal length lens, subclass 722 for lens with selective wavelength transmitting or blocking, subclass 728 for lens with aspheric surface, subclass 737 for lens with diverse refracting element, subclass 738 for lens with light limiting means, subclass 741 for lens with multipart element (e.g., Fresnel lens, etc.), subclass 811 for lens with support, and subclass 831 for prism lens.
- 381, Electrical Audio Signal Processing Systems and Devices, subclass 23.1 for hearing aid and subclass 72 for electrical hearing protector.
- 422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclass 44 for blood treating devices for transfusable blood.
- 423, Chemistry of Inorganic Compounds, appropriate subclasses for treating mixture of inorganic compounds.
- 424, Drug, Bio-Affecting and Body Treating Compositions, subclass 400 for compositions characterized by special physical forms and subclass 422 for compositions provided for an implant device (e.g., contact lens, etc.).
- 425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for treating or shaping means for plastic articles.
- 427, Coating Processes, subclasses 2.1+ for significant coating or impregnating processes which

- involve medical or dental purpose products, parts, intermediates, or subcombinations thereof, especially subclasses 2.24+ coating (or impregnating) processes for implantable permanent prosthesis.
- 428, Stock Material and Miscellaneous Articles, appropriate subclasses for a web, sheet or block of stock material product of either single or plural layers, and especially subclass 543 for miscellaneous articles or blanks not elsewhere provided.
- 433, Dentistry, subclasses 167+ for dental prostheses: and subclasses 215+ for tooth repair (crowns, fillings, inlays, etc.).
- 435, Chemistry: Molecular Biology and Microbiology, subclass 4 for measuring or testing processes involving enzymes or micro-organisms; subclass 289.1 for bioreactor; subclass 303.1 for incubator; subclass 307.1 for microorganism preservation, storage, or transport apparatus; and subclass 325 for process of preparing, maintaining, or preserving animal or plant cell, or a composition containing animal or plant cell.
- 436, Chemistry: Analytical and Immunological Testing, subclass 63 for biological cellular material tested, subclass 69 for clotting or clotting factor level tests, and subclass 547 for tests involving production or treatment of antibody.
- 446, Amusement Devices: Toys, subclasses 373+, 376+, 390, and 391+ for artificial body members intended for use with dummies or dolls.
- 514, Drug, Bio-Affecting and Body Treating Compositions, appropriate subclasses for composition for treating a body tissue.
- 520, Synthetic Resins or Natural Rubbers, appropriate subclasses for synthetic resin material.
- 523, Synthetic Resins or Natural Rubbers, subclass 113 for composition suitable for use as tissue or body member placement, restoration, or implant
- 530, Chemistry: Natural Resins or Derivatives; Peptides or Proteins; Lignins or Reaction Products Thereof, subclass 829 for blood proteins.
- 600, Surgery, subclass 1 and 9 for radioactive substance or magnetic field applied to body for therapy, subclass 16 for cardiac augmentation, subclass 22 for incubators, subclass 25 for surgically implanted vibratory hearing aid, subclass 29 for artificial sphincters, subclass 33 for reproduction and fertilization techniques, subclass 36 for method of making blood vessel or graft, subclass 37 for internal support or sling devices, subclass 163 for endoscope having an ocular with focusing, and subclass 300 for diagnostic testing, subclass 527 for devices which detect heartbeat by sensing movement of oscillatable body-supporting means, subclasses 558 and 559 for testing of eye or ear by visual auditory stimulus, and subclass 587 for devices for measuring anatomical characteristic or force applied to or exerted by body.
- 601, Surgery: Kinesitherapy, appropriate subclasses for kinesitherapy devices.
- 602, Surgery: Splint, Brace, or Bandage, subclass 1 and 41 for orthopedic bandage structure or material.
- 604, Surgery, appropriate subclasses for methods and apparatus which involves the application, storing, collecting, introduction, or removal of material from a body; subclass 8 for shunts; subclass 19 for means for introducing medicating material into a body; subclass 93 for implantable reservoir inserted in a body; and subclass 264 for body inserted tubular conduit structure to introduce or remove material into or from a body; and subclass 294 for means for treating eye or surface of ocular cavity.
- 606, Surgery, appropriate subclasses for surgical instruments; subclass 2, 27, and 32 for light, heat, or electrical application devices; subclass 53 for orthopedic instrumentation; subclass 86 for means used in bone reparation; subclass 89 for femoral head repair means; subclass 107 for instrument for removing, inserting, or aiding in the removal or insertion of eye lens material; subclass 108 for means for inserting or removing conduit within a body; subclass 151 for surgical mesh, clip, clamp, or band including connector elements for hollow body organs and nerve endings; subclass 159 for blood vessel or duct cutter, scraper, or abrader; subclass 161 for optic scraper or abrader; subclass 162 for instrument for cleaning eye; subclass 166 for corneal cutter or guide devices; subclass 16 for cutting, punching, or piercing surgical tools; subclass 191 for internal pressure applicator (e.g., dilator, etc.); subclass 204.25 for acupressure device for eye; subclass 213 for sutureless closures; subclass 222 for suturing needle; subclass 228 for sutures and ligatures; and subclass 232 for suture retaining means.
- 607, Surgery: Light, Thermal, and Electrical Application, subclass 1 for light, thermal, or electrical application devices; subclass 9 for electrical therapeutic system which regulates heart rate; subclasses 50 and 53 for applicators which promote tissue growth or optical function, sub-

class 96 for thermal applicators, subclass 115 for electrical energy applicators, and subclass 119 for electrical energy applicator placed in a natural heart.

901, Robots, appropriate subclasses for robot mechanism.

SUBCLASSES

1.1 ARTERIAL PROSTHESIS (I.E., BLOOD VESSEL):

This subclass is indented under the class definition. Subject matter wherein the artificial substitute or part is adapted to replace or assist a tubular structure which functions to contain and circulate blood within a human body (i.e., an artificial blood vessel or part thereof).

SEE OR SEARCH THIS CLASS, SUBCLASS:

901, for method of manufacturing prosthetic device.

1.11 Stent combined with surgical delivery system (e.g., surgical tools, delivery sheath, etc.):

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel or part thereof includes an artificial blood vessel support frame, and wherein means is provided for implanting the artificial blood vessel support frame into a blood vessel.

(1) Note. The term “stent” refers to the artificial blood vessel support frame.

SEE OR SEARCH CLASS:

606, Surgery, appropriate subclasses for surgical instruments, per se; and subclass 108 for surgical instrument adapted for inserting a conduit within the body.

1.12 Expandable stent with constraining means:

This subclass is indented under subclass 1.11. Subject matter wherein a dimension of the artificial blood vessel support frame is capable of expanding or contracting, and wherein means is provided to keep the artificial blood vessel support frame in a compressed and unexpanded position.

1.13 Stent in combination with graft:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel or part thereof includes an artificial blood vessel support frame and an artificial blood vessel.

(1) Note. The term “stent” refers to the artificial blood vessel support frame.

(2) Note. The term “graft” refers to the artificial blood vessel.

1.14 Stent penetrating natural blood vessel:

This subclass is indented under subclass 1.13. Subject matter wherein the artificial blood vessel support frame includes attachment means adapted for piercing through a wall of a natural blood vessel.

1.15 Stent structure:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel or part thereof is an artificial blood vessel support frame.

(1) Note. The term “stent” refers to the artificial blood vessel support frame.

1.16 Having multiple connected bodies:

This subclass is indented under subclass 1.15. Subject matter wherein the artificial blood vessel support frame includes a plurality of segments secured together.

1.17 Stent length remains constant with lateral expansion:

This subclass is indented under subclass 1.15. Subject matter wherein the artificial blood vessel support frame is capable of expanding without changing its longitudinal dimension.

1.18 Having shape memory:

This subclass is indented under subclass 1.15. Subject matter wherein the artificial blood vessel support frame is capable of expanding or contracting to a predetermined size in response to a change in its environmental condition.

(1) Note. A change in the environmental condition includes, for example, a change in the surrounding heat, moisture, pH level, etc.

1.19 Temperature responsive:

This subclass is indented under subclass 1.18. Subject matter wherein the artificial blood vessel support frame expands or contracts to a predetermined size in response to a change in its environmental temperature.

1.2 Self-expanding stent:

This subclass is indented under subclass 1.15. Subject matter wherein the artificial blood vessel support frame includes means to allow expansion.

1.21 Formed inside natural blood vessel:

This subclass is indented under subclass 1.15. Subject matter wherein the artificial blood vessel support frame is adapted to expand when inserted inside a natural blood vessel and then cure immediately to maintain its expanded form.

1.22 Helically wound:

This subclass is indented under subclass 1.15. Subject matter wherein the artificial blood vessel support frame is an elongated element which is twisted around a longitudinal axis to form a spiral member.

1.23 Including means for graft delivery (e.g., delivery sheath, ties, threads, etc.):

This subclass is indented under subclass 1.1. Subject matter including means for implanting the artificial blood vessel member into a natural blood vessel.

(1) Note. The term "graft" refers to artificial blood vessel.

SEE OR SEARCH CLASS:

606, Surgery, appropriate subclasses for surgical instruments, per se; and subclass 108 for surgical instrument adapted for inserting a conduit within body.

1.24 Including valve:

This subclass is indented under subclass 1.1. Subject matter including means for controlling a blood flow rate (i.e., a valve).

1.25 Inflatable graft:

This subclass is indented under subclass 1.24. Subject matter wherein the artificial blood ves-

sel member is adapted to expand when filled with a fluid.

1.26 Heart valve:

This subclass is indented under subclass 1.24. Subject matter wherein the blood flow rate controlling means is adapted to be implanted in a heart.

1.27 Having plurality of parallel lumens:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member includes multiple parallel artificial blood vessel members.

(1) Note. "Lumen" is an art term which refers to blood vessel.

1.28 Having pleats:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member includes a surface provided with folds.

1.29 Longitudinal pleats:

This subclass is indented under subclass 1.28. Subject matter wherein the folds are parallel to a longitudinal axis of the artificial blood vessel member.

1.3 Having variable diameter:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member has sections with various cross sectional areas.

1.31 Enlarged end:

This subclass is indented under subclass 1.3. Subject matter wherein the artificial blood vessel member has an end which has a largest cross sectional area relative to the entire body of the artificial blood vessel member.

1.32 Having built-in reinforcement:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member is a one-piece member structurally provided with means adapted to strengthen the artificial blood vessel member.

(1) Note. Means adapted to strengthen the artificial blood vessel member includes, for example, a strand of fiber wrapped

around the artificial blood vessel member, etc.

1.33 Monofilament:

This subclass is indented under subclass 1.32. Subject matter wherein the strengthening means is made from one strand of fiber wrapped around a wall of the artificial blood vessel member.

1.34 Having marker (e.g., color, radiopaque, etc.):

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member includes identification means which enables a particular portion of the artificial blood vessel member to be visually detected.

- (1) Note. The identification means includes, for example, a radiopaque or colored part, etc.

1.35 Bifurcated:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member includes a first tubular body and a second tubular body joined to the first tubular body.

1.36 With means to attach graft to natural blood vessel (e.g., hooks, etc.):

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member includes means adapted to secure the artificial blood vessel member to a natural blood vessel.

- (1) Note. The term "graft" refers to artificial blood vessel.
- (2) Note. The securing means includes, for example, hooks, fastener, etc.

1.37 Having angled cut (i.e., oblique cut):

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member includes a section having a slant cut at one end.

1.38 Absorbable in natural tissue:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood ves-

sel member is made of a material adapted to be dissolved in surrounding natural tissues.

1.39 Having pores:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member is made from a sheet of material having tiny openings.

- (1) Note. In general, the pores are adapted for promoting the absorbability of the artificial blood vessel member.

1.4 Pore gradient:

This subclass is indented under subclass 1.39. Subject matter wherein the artificial blood vessel member includes layers of material with different degrees of porosity.

1.41 Having living cell:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member includes natural living tissue.

1.42 Drug delivery:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member is provided with means to distribute a treatment agent to surrounding natural living tissues.

1.43 Antithrombogenic:

This subclass is indented under subclass 1.42. Subject matter wherein the treatment agent includes an anticoagulant substance adapted to prevent or reduce the deposition of plasma protein into a wall of the artificial blood vessel member.

1.44 Having plural layers:

This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member is a laminated structure.

1.45 Impregnation:

This subclass is indented under subclass 1.44. Subject matter wherein the artificial blood vessel member is made from a sheet of material having a surface embedded with tiny particles.

- (1) Note. The embedded tiny particles may serve to promote the permeability of or reinforce the blood vessel wall.

- 1.46 Coating:**
This subclass is indented under subclass 1.44. Subject matter wherein a surface of the artificial blood vessel member is covered with a layer of substance.
- 1.47 Collagen:**
This subclass is indented under subclass 1.46. Subject matter wherein the covered layer includes a collagen-based substance.
- 1.48 Protein:**
This subclass is indented under subclass 1.4. Subject matter wherein the covered layer includes a protein.
- 1.49 Made of synthetic material:**
This subclass is indented under subclass 1.1. Subject matter wherein the artificial blood vessel member is made from a manmade material.
- 1.5 Knitted:**
This subclass is indented under subclass 1.49. Subject matter wherein the material is formed from joined loops of strands.
- 1.51 Woven:**
This subclass is indented under subclass 1.49. Subject matter wherein the material is formed from interlaced strands.
- 1.52 Velour surface:**
This subclass is indented under subclass 1.51. Subject matter wherein an outer surface of the material has a velvet-like layer.
- 1.53 Braided:**
This subclass is indented under subclass 1.51. Subject matter wherein the material includes plurality of interconnected rope-like strands and wherein each rope-like strand is formed by interweaving three or more strands together.
- 1.54 Fiber:**
This subclass is indented under subclass 1.49. Subject matter wherein the material is formed from plurality of thread-like strands.
- 2.1 HEART VALVE:**
This subclass is indented under the class definition. Subject matter wherein the artificial substitute or part is adapted to permanently replace an anatomical structure which func-
- tions to retard or prevent the flow of blood through a heart (i.e., an artificial heart valve or device).
- SEE OR SEARCH THIS CLASS, SUBCLASS:
900, for stent for heart valve.
- SEE OR SEARCH CLASS:
600, Surgery, subclass 1 and 9 for radioactive substance or magnetic field applied to body for therapy, subclass 16 for cardiac augmentation, subclass 22 for incubators, and subclass 36 for method of making blood vessel or graft.
601, Surgery: Kinesitherapy, appropriate subclasses for kinesitherapy devices.
602, Surgery: Splint, Brace, or Bandage, subclass 1 and 41 for orthopedic bandage structure or material.
604, Surgery, appropriate subclasses for methods and apparatus which involves the application, storing, collecting, introduction, or removal of material from a body; subclass 8 for shunts; subclass 19 for means for introducing medicating material into a body; subclass 93 for implantable reservoir inserted in a body; and subclass 264 for body inserted tubular conduit structure to introduce or remove material into or from a body.
606, Surgery, appropriate subclasses for surgical instruments; subclass 2, 27, and 32 for light, heat, or electrical application devices; subclass 53 for orthopedic instrumentation; subclass 108 for means for inserting or removing conduit within a body; subclass 151 for surgical mesh, clip, clamp, or band including connector elements for hollow body organs and nerve endings; subclass 159 for blood vessel or duct cutter, scraper, or abradar; subclass 167 for cutting, punching, or piercing surgical tools; subclass 191 for internal pressure applicator (e.g., dilator, etc.); subclass 213 for sutureless closures; subclass 222 for suturing needle; subclass 228 for sutures and ligatures; and subclass 232 for suture retaining means.

- 607, Surgery: Light, Thermal, and Electrical Application, subclass 1 for light, thermal, or electrical application devices; subclass 9 for electrical therapeutic system which regulates heart rate; subclass 96 for thermal applicators; subclass 115 for electrical energy applicators; and subclass 119 for electrical energy applicator placed in a natural heart.
- 2.11 Combined with surgical tool:**
This subclass is indented under subclass 2.1. Subject matter further including a surgical instrument for implanting the artificial heart valve or device into a natural heart.
- SEE OR SEARCH CLASS:
606, Surgery, appropriate subclasses for surgical instrumentation devices, per se.
- 2.12 Flexible leaflet:**
This subclass is indented under subclass 2.1. Subject matter wherein the artificial heart valve or device includes a closure member made of pliant material capable of flexing between open and closed positions.
- (1) Note. The term “leaflet” refers to a relatively soft component of the heart valve having structure adapted to close an opening.
- 2.13 Leaflet made of biological tissue:**
This subclass is indented under subclass 2.12. Subject matter wherein the flexing closure member is made from a natural living tissue.
- 2.14 Supported by resilient frame:**
This subclass is indented under subclass 2.13. Subject matter wherein the flexing closure member is mounted on an elastic framework.
- 2.15 Trileaflet:**
This subclass is indented under subclass 2.13. Subject matter wherein the flexing closure member includes three flexing flaps.
- 2.16 Bileaflet:**
This subclass is indented under subclass 2.13. Subject matter wherein the flexing closure member includes two flexing flaps.
- 2.17 Supported by frame:**
This subclass is indented under subclass 2.12. Subject matter wherein the flexing closure member is mounted on a framework.
- 2.18 Resilient frame:**
This subclass is indented under subclass 2.17. Subject matter wherein the framework is an elastic framework.
- 2.19 Trileaflet:**
This subclass is indented under subclass 2.17. Subject matter wherein the flexing closure member includes three flexing flaps.
- 2.2 Having rigid or semirigid pivoting occluder:**
This subclass is indented under subclass 2.1. Subject matter wherein the artificial heart valve or device includes a firm or partially unyielding closure member adapted to pivot about an axis into an open or closed position.
- (1) Note. The term “occluder” refers to a relatively hard member adapted to close an opening.
- 2.21 Fixed cylindrical pin structured to permit only pivoting movement of occluder:**
This subclass is indented under subclass 2.2. Subject matter wherein the closure member is adapted to have only pivoting movement about a fixed cylindrical rod.
- 2.22 Annular support member includes projecting means for guiding occluder \3ds pivoting motion:**
This subclass is indented under subclass 2.2. Subject matter wherein the artificial heart valve or device includes a ring member having a guidepost extending outwardly from a wall of the ring member and adapted for assisting in directing the pivoting movement of the closure member.
- 2.23 Strut projecting means:**
This subclass is indented under subclass 2.22. Subject matter wherein the guidepost is an elongated shaft member.
- 2.24 Strut projecting means extends through hole in occluder:**
This subclass is indented under subclass 2.23. Subject matter wherein the elongated shaft

- member projects into an aperture in the closure member.
- 2.25 Strut projecting means cooperates with depression portion of occluder to guide pivoting movement:**
This subclass is indented under subclass 2.23. Subject matter wherein the elongated shaft member is adapted for coordinating with a dent in the closure member to direct the pivoting movement of the closure member.
- 2.26 Occluder also includes guiding projecting means:**
This subclass is indented under subclass 2.22. Subject matter wherein the closure member is also provided with a guidepost protruding outwardly from a wall of the closure member, and wherein both guideposts cooperate together to direct the pivoting movement of the closure member.
- 2.27 Occluder includes projecting means defining pivoting axis:**
This subclass is indented under subclass 2.2. Subject matter wherein the closure member includes means protruding outwardly from a wall of the closure member and adapted to form the pivoting axis for the closure member.
- 2.28 Slot in annular support member:**
This subclass is indented under subclass 2.27. Subject matter wherein the artificial heart valve or device includes a ring member having a wall provided with a cutout portion.
- 2.29 Triangular-shaped slot:**
This subclass is indented under subclass 2.28. Subject matter wherein the cutout portion has a triangular shape.
- 2.3 Crescent-shaped slot:**
This subclass is indented under subclass 2.28. Subject matter wherein the cutout portion has a first-quarter moon shape.
- 2.31 Slot having opposed convex guiding surfaces:**
This subclass is indented under subclass 2.28. Subject matter wherein the cutout portion includes juxtaposed convex cam surfaces.
- 2.32 Elongated oval-shaped slot:**
This subclass is indented under subclass 2.28. Subject matter wherein the cutout portion has an approximately elliptical shape.
- 2.33 Having particular geometry detail:**
This subclass is indented under subclass 2.2. Subject matter wherein the closure member has a special configuration.
- 2.34 Having rigid or semirigid translating occluder:**
This subclass is indented under subclass 2.1. Subject matter wherein the artificial heart valve or device includes a firm or partially unyielding closure member adapted to move linearly into an open or closed position.
- 2.35 Ball-valve type:**
This subclass is indented under subclass 2.34. Subject matter wherein the closure member has a spherical shape.
- 2.36 Annuloplasty device:**
This subclass is indented under subclass 2.1. Subject matter wherein the artificial heart valve or device is an annular ring adapted for securement to a natural heart valve annulus to support and repair the shape of a dilated or elongated natural heart valve.
- 2.37 Adjustable:**
This subclass is indented under subclass 2.36. Subject matter wherein the annular ring includes means to alter its perimeter or shape.
- 2.38 Annular member for supporting artificial heart valve:**
This subclass is indented under subclass 2.1. Subject matter wherein the artificial heart valve or device is a ring member adapted for supporting an artificial heart valve.
- 2.39 Rotationally adjustable relative to suture ring:**
This subclass is indented under subclass 2.38. Subject matter including an outer ring member adapted to be sewn onto a natural heart valve annulus, and means for permitting relative rotating motion between the ring members.

- 2.4 Having means for fixedly securing annular support member to sewing ring:**
This subclass is indented under subclass 2.38. Subject matter further including an outer ring member adapted to be sewn onto a natural heart valve annulus, and means for fixedly attaching the outer ring member to a circumferential outer surface of the ring member.
- 2.41 Sewing ring:**
This subclass is indented under subclass 2.38. Subject matter wherein the ring member is adapted to be sewn onto a natural heart valve annulus.
- 2.42 Specific material for heart valve:**
This subclass is indented under subclass 2.1. Subject matter wherein the artificial heart valve or device is made of a particular type of material.
- 3.1 CORPOREAL ARTIFICIAL HEART, HEART ASSIST (E.G., IMPLANTABLE BLOOD PUMP, ETC.), CONTROL REGULATOR, OR POWER SUPPLY THEREFOR, OR METHOD OF OPERATION THEREFOR:**
This subclass is indented under the class definition. Subject matter adapted to either (a) replace a muscular blood pumping natural organ (i.e., an artificial heart), or (b) direct or aid in the functioning or operation of an artificial heart, or (c) provide energy to an artificial heart, or (d) provide for a process of directing the operation of an artificial heart.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
900, for stent for heart valve.
- SEE OR SEARCH CLASS:
73, Measuring and Testing, appropriate subclasses for measuring and testing devices.
251, Valves and Valve Actuation, appropriate subclasses for valves with activating means.
600, Surgery, subclass 1 and 9 for radioactive substance or magnetic field applied to body for therapy, subclass 16 for cardiac augmentation, subclass 22 for incubators, and subclass 36 for method of making blood vessel or graft.
- 601, Surgery: Kinesitherapy, appropriate subclasses for kinesitherapy devices.
- 602, Surgery: Splint, Brace, or Bandage, subclass 1 and 41 for orthopedic bandage structure or material.
- 604, Surgery, appropriate subclasses for methods and apparatus which involves the application, storing, collecting, introduction, or removal of material from a body; subclass 8 for shunts; subclass 19 for means for introducing medicating material into a body; subclass 93 for implantable reservoir inserted in a body; and subclass 264 for body inserted tubular conduit structure to introduce or remove material into or from a body.
- 606, Surgery, appropriate subclasses for surgical instruments; subclass 2, 27, and 32 for light, heat, or electrical application devices; subclass 53 for orthopedic instrumentation; subclass 108 for means for inserting or removing conduit within a body; subclass 151 for surgical mesh, clip, clamp, or band including connector elements for hollow body organs and nerve endings; subclass 159 for blood vessel or duct cutter, scraper, or abrader; subclass 167 for cutting, punching, or piercing surgical tools; subclass 191 for internal pressure applicator (e.g., dilator, etc.); subclass 213 for sutureless closures; subclass 222 for suturing needle; subclass 228 for sutures and ligatures; and subclass 232 for suture retaining means.
- 607, Surgery: Light, Thermal, and Electrical Application, subclass 1 for light, thermal, or electrical application devices; subclass 9 for electrical therapeutic system which regulates heart rate; subclass 96 for thermal applicators; subclass 115 for electrical energy applicators; and subclass 119 for electrical energy applicator placed in a natural heart.
- 3.11 Including electrical or magnetic means adjacent to flexible diaphragm or chamber to**

- effect contraction thereto (e.g., electromagnet, shape memory material, etc.):**
This subclass is indented under subclass 3.1.
Subject matter including a pliable diaphragm or compartment arranged in proximity to an electrically actuated element or to means for producing a magnetic field, wherein the pliable diaphragm expands and contracts by the operation of the electrically actuated element or the magnetic field producing means.
- (1) Note. The electrically actuated element includes, for example, a member operated or moved by an electrical device, etc.
- (2) Note. The means for producing a magnetic field includes, for example, electromagnet, etc.
- 3.12 Powered by muscle:**
This subclass is indented under subclass 3.1.
Subject matter wherein the artificial heart is actuated by the motion of a biological muscle.
- 3.13 Having enclosed rotary member for directly impelling blood flow:**
This subclass is indented under subclass 3.1.
Subject matter wherein the artificial heart includes a rotor encased in a housing and adapted for causing blood to flow through the housing.
- 3.14 Blood flow along electromagnetic section of stator member:**
This subclass is indented under subclass 3.13.
Subject matter including a stationary element having an electromagnet attached thereto, wherein blood is adapted to flow through a passage adjacent to the electromagnetic part of the stationary element.
- 3.15 Rotary member driven by flexible shaft (e.g., cable, etc.):**
This subclass is indented under subclass 3.13.
Subject matter wherein the rotor is adapted to rotate by a flexible elongate member.
- (1) Note. The flexible elongate member includes, for example, a cable.
- 3.16 Having flexible diaphragm or chamber:**
This subclass is indented under subclass 3.1.
Subject matter wherein the artificial heart includes a resilient membrane or bag-like member.
- 3.17 Flexible diaphragm or chamber directly compressed by mechanical member:**
This subclass is indented under subclass 3.16.
Subject matter wherein the resilient membrane or bag-like member is adapted to be directly pressed or squeezed by a movable member driven by machinery means.
- 3.18 Reciprocating mechanical member attached to rotary drive means:**
This subclass is indented under subclass 3.17.
Subject matter wherein the movable member is adapted to move linearly back and forth by a rotary motor.
- 3.19 Reciprocating mechanical member attached to reciprocating drive means:**
This subclass is indented under subclass 3.17.
Subject matter wherein the movable member is adapted to move linearly back and forth by linearly operated drive means.
- 3.2 Reciprocating mechanical member driven by pressurized working fluid:**
This subclass is indented under subclass 3.17.
Subject matter wherein the movable member is adapted to move linearly back and forth by a compressed fluid.
- 3.21 Flexible chamber or diaphragm directly compressed by pressurized working fluid:**
This subclass is indented under subclass 3.16.
Subject matter wherein the resilient membrane or bag-like member is in contact with and pressed or squeezed by a compressed fluid.
- 3.22 Reciprocating member:**
This subclass is indented under subclass 3.21.
Subject matter wherein the fluid is compressed by a drive shaft which moves linearly back and forth.
- 3.23 Reciprocating member attached to rotary drive means:**
This subclass is indented under subclass 3.22.
Subject matter wherein the linearly moving back and forth drive shaft is connected to rotating drive means.

- 3.24 Rotary pump:**
This subclass is indented under subclass 3.21. Subject matter wherein the fluid is compressed by a pump having a rotary drive member.
- 3.25 Rotary pump reverses during pumping cycle:**
This subclass is indented under subclass 3.24. Subject matter wherein the rotary drive member is adapted for operating in an opposite direction.
- 3.26 Having connecting means to allow blood flow:**
This subclass is indented under subclass 3.1. Subject matter wherein the artificial heart includes means adapted for attaching the artificial heart to a natural blood vessel and allowing blood to flow through.
- 3.27 Including electrical power generating means:**
This subclass is indented under subclass 3.1. Subject matter wherein the artificial heart includes an electrical energy supply source.
- 3.28 Including condition responsive means:**
This subclass is indented under subclass 3.1. Subject matter wherein the artificial heart includes sensing means adapted to detect and respond to a change in the surrounding environment of the artificial heart.
- 3.29 Material characteristic:**
This subclass is indented under subclass 3.1. Subject matter wherein the artificial heart is made of a specific kind of material.
- 3.3 Method of teaching use of artificial heart or part thereof:**
This subclass is indented under subclass 3.1. Subject matter including an instructional step of utilizing or operating the artificial heart.
- (1) Note. Methods of using the devices of subclass 3.1 above, which have specific structures, are classified with subclass 3.1 above.
- 4.1 EYE PROSTHESIS (E.G., LENS OR CORNEAL IMPLANT, OR ARTIFICIAL EYE, ETC.):**
This subclass is indented under the class definition. Subject matter wherein the artificial substitute or part is adapted to permanently replace or assist a natural living organ capable of vision or light sensitivity (i.e., an artificial eye or part thereof).
- SEE OR SEARCH CLASS:
- 264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclass 1.1 for optical article shaping or treating; subclass 129 for methods of shaping or treating plastic article with printing or coating of work piece; and subclass 241 for mechanical shaping or molding to produce composite, plural parts or multilayered article.
- 351, Optics: Eye Examining, Vision Testing and Correcting, subclass 41 for spectacles and eyeglasses as aids to vision, subclass 160 for eye contact lens, subclass 161 for multifocal eye contact lens, subclasses 170 and 175 for eye contact lens with prismatic segment or part, and subclass 176 for eye contact lens with focus and/or astigmatism correction means.
- 356, Optics: Measuring and Testing, subclass 357 for measuring or testing a dimension or optical configuration by light interference.
- 359, Optics: Systems (Including Communication) and Elements, subclass 642 for lens, subclass 652 for lens with graded refractive index, subclass 678 for prism lens type, subclass 707 for diffusing lens, subclass 721 for plural focal length lens, subclass 722 for lens with selective wavelength transmitting or blocking, subclass 728 for lens with aspheric surface, subclass 737 for lens with diverse refracting element, subclass 738 for lens with light limiting means, subclass 741 for lens with multipart element (e.g., Fresnel lens, etc.), subclass 811 for lens with support, and subclass 831 for prism lens.
- 600, Surgery, subclass 1 and 9 for radioactive substance or magnetic field

- applied to body for therapy, subclass 22 for incubators, subclass 36 for method of making blood vessel or graft, and subclass 163 for endoscope having an ocular with focusing.
- 601, Surgery: Kinesitherapy, appropriate subclasses for kinesitherapy devices.
- 602, Surgery: Splint, Brace, or Bandage, subclass 1 and 41 for orthopedic bandage structure or material.
- 604, Surgery, appropriate subclasses for methods and apparatus which involves the application, storing, collecting, introduction, or removal of material from a body; subclass 8 for shunts; subclass 19 for means for introducing medicating material into a body; subclass 93 for implantable reservoir inserted in a body; subclass 264 for body inserted tubular conduit structure to introduce or remove material into or from a body; and subclass 294 for means for treating eye or surface of ocular cavity.
- 606, Surgery, appropriate subclasses for surgical instruments; subclass 107 for instrument for removing, inserting, or aiding in the removal or insertion of eye lens material; subclass 159 for blood vessel or duct cutter, scraper, or abrader; subclass 161 for optic scraper or abrader; subclass 162 for instrument for cleaning eye; subclass 166 for corneal cutter or guide devices; and subclass 204.25 for acupressure device for eye.
- 607, Surgery: Light, Thermal, and Electrical Application, subclass 1 for light, thermal, or electrical application devices; and subclasses 50 and 53 for applicators which promote tissue growth or optical function.
- 5.11 Corneal implant:**
This subclass is indented under subclass 4.1. Subject matter wherein the artificial substitute or part is adapted to permanently replace or assist a transparent anterior portion of a natural eye (i.e., an artificial cornea or part thereof).
- SEE OR SEARCH CLASS:
351, Optics: Eye Examining, Vision Testing and Correcting, subclass 160 for optical lens structure which is dis-
- closed as being designed for direct contact with the eye, usually the cornea, but is removable and not intended to be permanently fixed to the eye (e.g., contact-type lens, etc.).
- 5.12 Corneal ring:**
This subclass is indented under subclass 5.11. Subject matter wherein the artificial cornea or part thereof is an annular member adapted to adjust the curvature or shape of a cornea of a natural eye.
- 5.13 Having hole:**
This subclass is indented under subclass 5.11. Subject matter wherein the artificial cornea or part thereof includes an aperture.
- 5.14 Lens connected to distinct attachment means:**
This subclass is indented under subclass 5.11. Subject matter wherein the artificial cornea or part thereof includes securement means joined to an artificial optical member of the artificial cornea and adapted for securing the optical member to a defective natural cornea.
- 5.15 Having integral protrusion means for attaching lens to cornea:**
This subclass is indented under subclass 5.11. Subject matter wherein the artificial cornea or part thereof includes an artificial optical member and built-in projection means extending outwardly therefrom and adapted for mounting the artificial optical member onto a defective natural cornea.
- 5.16 Material characteristic of corneal implant:**
This subclass is indented under subclass 5.11. Subject matter wherein the artificial cornea or part thereof is made from a particular material.
- 6.11 Intraocular lens:**
This subclass is indented under subclass 4.1. Subject matter wherein the artificial substitute or part is adapted to permanently replace or assist the natural crystalline lens of a natural eye (i.e., an artificial intraocular lens or part thereof).
- 6.12 Combined with surgical tool:**
This subclass is indented under subclass 6.11. Subject matter further including a medical instrument adapted for assisting in implanting

- the artificial intraocular lens or part thereof into a natural eye.
- SEE OR SEARCH CLASS:
606, Surgery, appropriate subclasses for surgical instruments, per se.
- 6.13 Having fluid-filled chamber:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part thereof includes an enclosed space adapted for containing a fluid.
- (1) Note. The term "fluid" includes, for example, liquid, gas, gel, etc.
- 6.14 Lens body having through hole for pressure equalization:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part thereof includes an aperture extending from a posterior surface to an anterior surface of the artificial intraocular lens or part and adapted to balance the pressure in the anterior and posterior chambers of a natural eye.
- 6.15 Lens having spacers:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes an optical body having a plurality of posteriorly extending protrusions adapted for providing a small gap between a posterior surface of the optical body and the posterior capsule of a natural eye.
- 6.16 Having cellular growth inhibitors:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes means adapted to prevent the growth of epithelial cells on anterior or posterior surfaces of the artificial intraocular lens or part.
- (1) Note. The means for preventing the growth of epithelial cells includes, for example, special coating layer, irregularly roughened region, etc.
- 6.17 Having structure for blocking or reducing amount of light transmitted (e.g., glare reduction, etc.):**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes means adapted to inhibit or lessen transmitted light rays.
- 6.18 Having means on lens to reduce overall dimension of lens for insertion into small incision:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes means adapted to permit the artificial intraocular lens or part to be collapsed into a smaller configuration for implanting through a small incision into a natural eye.
- (1) Note. The means for permitting the artificial intraocular lens or part to be collapsed into a smaller configuration includes, for example, band retainer, foldable region, hinges, etc.
- 6.19 Segmented zones:**
This subclass is indented under subclass 6.18. Subject matter wherein the artificial intraocular lens or part includes a plurality of lens sections.
- 6.2 Segments slide:**
This subclass is indented under subclass 6.19. Subject matter wherein the lens sections are adapted to glide relative to one another to reduce the overall dimension of the artificial intraocular lens.
- 6.21 Segments fold:**
This subclass is indented under subclass 6.19. Subject matter wherein the lens sections are adapted to be bent relative to each other to reduce the optical body into a smaller configuration.
- 6.22 Including mechanically or electrically activated means on lens to alter focal power of lens (e.g., electromagnet, material which is ablated by laser, etc.):**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes adjusting means actuated by a mechanical or electrical source and adapted for varying the location of a focal point of the artificial intraocular lens with respect to a cornea or retina of a natural eye.
- 6.23 Aspheric lens:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes a curved surface having a

- central region and an outer edge, and wherein the curved surface has a particular radius of curvature which progressively varies from the central region to the outer edge.
- 6.24 Multifocal lens:**
This subclass is indented under subclass 6.23. Subject matter wherein the particular radius of curvature varies such as to provide different focal zones.
- 6.25 Fresnel lens:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes a surface having concentric ring zones with steps provided between the zones.
- 6.26 Prismatic lens:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes means or is shaped to function as a prism (i.e., to disperse incident light into a spectrum).
- 6.27 Lens having regions with different focusing powers (i.e., multifocal):**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part includes various optical zones each having a particular focal power to assist in the natural focusing action of a natural eye.
- 6.28 Concentric zones:**
This subclass is indented under subclass 6.27. Subject matter wherein the artificial intraocular lens or part includes plural concentric circles which together form the various optical zones on the artificial intraocular lens.
- 6.29 Radial zones:**
This subclass is indented under subclass 6.27. Subject matter wherein the intraocular lens or part is radially divided into generally triangular-shaped optical zones.
- 6.3 Diffractive multifocal lens:**
This subclass is indented under subclass 6.27. Subject matter wherein the intraocular lens or part further includes obstruction means for causing incident light to bend around it.
- 6.31 Diffractive lens:**
This subclass is indented under subclass 6.11. Subject matter wherein the intraocular lens or part includes means adapted to provide the intraocular lens or part with a diffractive power.
- 6.32 Multiple lens:**
This subclass is indented under subclass 6.11. Subject matter wherein the intraocular lens or part includes a plurality of optical elements arranged relative to each other to assist in the focusing action of a natural eye.
- 6.33 Side by side:**
This subclass is indented under subclass 6.32. Subject matter wherein the optical elements are arranged beside one another.
- 6.34 In series along visual axis:**
This subclass is indented under subclass 6.32. Subject matter wherein the optical elements are arranged one in front of another along an optical axis of a natural eye.
- 6.35 One lens is external from natural eye cavity:**
This subclass is indented under subclass 6.34. Subject matter wherein one of the optical elements is located outside of the cavity of a natural eye.
- (1) Note. The optical element external from the natural eye cavity includes, for example, spectacles, etc.
- 6.36 One lens is natural crystalline lens:**
This subclass is indented under subclass 6.34. Subject matter wherein one of the optical elements is the lens of a natural eye.
- 6.37 Focal power of lens can be continuously varied by movement of body part (e.g., head, eyes, ciliary muscles, etc.):**
This subclass is indented under subclass 6.11. Subject matter wherein the intraocular lens or part includes means adapted to allow the intraocular lens to alter its focusing capability in response to motion of a human body part.
- 6.38 Having supporting structure for lens:**
This subclass is indented under subclass 6.11. Subject matter wherein the intraocular lens or part includes supporting means connected to an

- optical body of the intraocular lens and adapted to hold the optical body in place.
- 6.39 Supporting structure conforms to shape of capsular bag:**
This subclass is indented under subclass 6.38. Subject matter wherein the supporting means is adapted to follow a contour of an interior wall of a capsule bag of a natural eye.
- 6.4 Surrounding optic:**
This subclass is indented under subclass 6.38. Subject matter wherein the supporting means is an annular member encircling a periphery of the optical body.
- 6.41 Separable from intraocular lens:**
This subclass is indented under subclass 6.4. Subject matter wherein the annular member is disconnectable from the optical body.
- 6.42 Filamentary:**
This subclass is indented under subclass 6.4. Subject matter wherein the supporting means includes an elongated thread-like member.
- 6.43 Specific supporting structure (e.g., haptic, plate, etc.):**
This subclass is indented under subclass 6.38. Subject matter wherein the intraocular lens or part includes detail structure of the supporting means.
- (1) Note. The term “haptic” refers to an elongated member.
- 6.44 Plate:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means includes a disc-like support member.
- 6.45 Having means to temporarily stabilize haptic:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means is an elongated member having means for maintaining the elongated member in a compact condition during the implanting of the artificial intraocular lens into a natural eye.
- 6.46 Haptic and optic junction:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means is
- an elongated member joined to an end of the optical body.
- 6.47 Haptic includes notch:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means is an elongated member having a cutout portion.
- 6.48 Haptic has different color from optic:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means is an elongated member and is shaded to provide obvious visual difference between the elongated member and the optical body.
- 6.49 Haptic has particular cross-sectional geometry:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means is an elongated member having a specific cross-sectional configuration.
- 6.5 Haptic is formed from multiple layers:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means is an elongated member having a laminated structure.
- 6.51 Having loop:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means includes a closed curve structure.
- 6.52 Four filaments:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means includes four elongated thread-like members.
- 6.53 Three filaments:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means includes three elongated thread-like members.
- 6.54 Two filaments:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means includes two elongated thread-like members.
- 6.55 One filament:**
This subclass is indented under subclass 6.43. Subject matter wherein the supporting means includes one elongated thread-like member.

- 6.56 Material characteristic of lens:**
This subclass is indented under subclass 6.11. Subject matter wherein the artificial intraocular lens or part thereof is made of a particular material.
- 6.57 Lens includes antithrombotic substance:**
This subclass is indented under subclass 6.56. Subject matter wherein the artificial intraocular lens or part thereof is provided with an anticoagulant inhibitor to prevent clot formation.
- 6.58 Lens has specific glass transition temperature:**
This subclass is indented under subclass 6.56. Subject matter wherein the artificial intraocular lens or part thereof is made of a glass material having a specific softening temperature and is deformable at a temperature above the specific softening temperature and restored to its original shape at a temperature below the specific softening temperature.
- 6.59 Lens composed of swellable material:**
This subclass is indented under subclass 6.56. Subject matter wherein the artificial intraocular lens or part thereof is made from a material capable of hydration by fluid to expand in dimension.
- 6.6 Lens includes ultraviolet absorber:**
This subclass is indented under subclass 6.56. Subject matter wherein the artificial intraocular lens or part thereof is made of material capable of absorbing ultraviolet radiation.
- 6.61 Lens is collagen based:**
This subclass is indented under subclass 6.56. Subject matter wherein the artificial intraocular lens or part thereof is made from a material having a collagen composition.
- 6.62 Lens has specific coating:**
This subclass is indented under subclass 6.56. Subject matter wherein the artificial intraocular lens or part includes a particular layer adapted to cover an outer surface of the artificial intraocular lens or part.
- 6.63 Retina:**
This subclass is indented under subclass 4.1. Subject matter wherein the artificial substitute or part is adapted to permanently replace or

assist the photoreceptive layer and terminal expansion of the optic nerve in the dorsal aspect of a natural eye (i.e., an artificial retina or part thereof).

- 6.64 Globe:**
This subclass is indented under subclass 4.1. Subject matter wherein the artificial substitute or part is adapted to permanently replace or assist the eyeball part of a natural eye (i.e., an artificial eyeball or part thereof).

- 7 BREAST PROSTHESIS:**
This subclass is indented under the class definition. Subject matter manufactured or adapted to replace or assist a missing human mammary gland.

(1) Note. These devices may include means to mount or support the artificial breast on the body, and may include a breast-receiving cup to support or mold a natural breast.

SEE OR SEARCH CLASS:

450, Foundation Garments, subclass 38 for brassieres having inflatable or liquid-containing chambers designed to modify the appearance of an existing breast, subclasses 39+ for brassieres wherein a preshaped breast cup is made from a moldable material such as thermoplastic, and subclasses 54 and 55+ for padded brassieres and brassiere pads, per se, designed to modify the appearance or enhance the support of an existing breast.

- 8 Implantable:**
This subclass is indented under subclass 7. Subject matter manufactured or adapted to be inserted into or grafted to the mammary gland.

- 9 LARYNX, TRACHEA, TRACHEOBRONCHIAL PROSTHESIS OR COMBINATION THEREOF:**

This subclass is indented under the class definition. Subject matter manufactured or adapted to replace or assist either: (a) the portion of a human body respiratory tract containing the vocal cords, i.e., a larynx; or (b) the portion of a human body respiratory tract descending from the larynx to the bronchi, i.e., a trachea; or (c) the portion of a human body respiratory

tract leading from the lower end of the trachea to the lung, i.e., a bronchi; or (d) any combination of a larynx, trachea or bronchi.

- (1) Note. An artificial larynx is usually an electromechanical device which when activated, e.g., by motions of the neck in speech, simulates laryngeal activity thus enabling a laryngectomized person to converse.

SEE OR SEARCH CLASS:

- 84, Music, subclass 375 for imitation trumpets, jews' harps, and reed-horns of variable pitch.
- 116, Signals and Indicators, subclasses 137+ for horns, whistles and compressional wave generators.
- 181, Acoustics, pertinent subclasses for sound amplifying and transmitting means and methods.
- 381, Electrical Audio Signal Processing Systems and Devices, subclass 70 for an electrical artificial larynx.
- 446, Amusement Devices: Toys, subclasses 188+ for a toy having means to emit sound simulating a voice.
- 472, Amusement Devices, particularly subclass 64 for an illusion caused by sound imitation or effect.

10 EAR OR NOSE PROSTHESIS:

This subclass is indented under the class definition. Subject matter manufactured or adapted to replace or assist either all or part of: (a) a hearing organ; or (b) a defective nostril or smell sensing organ.

- (1) Note. A typical prosthesis for this subclass would be a stapedial prosthesis for an ear or a nasal septum plug for a nose.

11.11 IMPLANTABLE PROSTHESIS:

This subclass is indented under the class definition. Subject matter wherein the artificial substitute or part is adapted to be inserted into or grafted to a living body.

SEE OR SEARCH CLASS:

- 8, Bleaching and Dyeing: Fluid Treatment and Chemical Modification of Textiles and Fibers, subclass 94.1 for treatment of hides, skins, feathers and animal tissues.

- 29, , Metal working, subclass 1.1 for arm making processes; subclass 33 for plural diverse manufacturing apparatus with means for metal shaping or assembling; subclass 400.1 for method of mechanical manufacture; subclass 402.01 for repairing processes; subclass 419.1 for shaping fiber or fibered material processes; subclass 428 for assembling or joining processes; subclass 469.5 for metal deforming with nonmetallic bonding processes; subclass 700 for assemble or disassemble means; subclass 705 for assemble or disassemble means having means to test work or product; subclass 888 for fluid pump making; subclass 890.12 for valve making.
- 128, Surgery, subclass 630 for diagnostic testing or detecting devices; subclass 781 for devices for testing or detecting spine or body movement; subclass 898 for general surgical methods.
- 424, Drug, Bio-Effecting And Body Treating Composition, subclass 400 for compositions characterized by special physical forms; subclass 422 for compositions provided for an implant device (e.g., contact lens, etc.).
- 435, Chemistry: Molecular Biology and Microbiology, subclass 4 for measuring or testing processes involving enzymes or micro-organisms; subclass 240.1 for process of preparing, maintaining or preserving animal or plant cell, or a composition containing animal or plant cell, subclass 289.1 for bioreactor; subclass 303.1 for incubator; subclass 307.1 for microorganism preservation, storage or transport apparatus.
- 436, Chemistry: Analytical and Immunological Testing, subclass 63 for biological cellular material tested; subclass 547 for tests involving production or treatment of antibody.
- 514, Drug, Bio-Effecting And Body Treating Compositions, appropriate subclasses for composition for treating a body tissue.
- 520, Synthetic Resins Or Natural Rubbers, appropriate subclasses for synthetic resin material.

- 523, Synthetic Resins or Natural Rubbers, subclass 113 for composition suitable for use as tissue or body member placement, restorative, or implant.
- 530, Chemistry: Natural Resin or Derivative; Peptides or Protein; Lignins or Reaction Products Thereof, subclass 829 for blood proteins.
- 602, Surgery: Splint, Brace, Or Bandage, subclass 1 and 41 for orthopedic bandage structure or material.
- 604, Surgery, appropriate subclasses for methods and apparatus which involves the application, storing, collecting, introduction, or removal of material from a body; subclass 8 for shunts; subclass 19 for means for introducing medicating material into a body; subclass 93 for implantable reservoir inserted in a body; subclass 264 for body inserted tubular conduit structure to introduce or remove material into or from a body.
- 606, Surgery, appropriate subclasses for surgical instruments; subclass 2, 27, and 32 for light, heat, or electrical application devices; subclass 53 for orthopedic instrumentation; subclass 86 for means used in bone reparation; subclass 89 for femoral head repair means; subclass 108 for means for inserting or removing conduit within a body; subclass 151 for surgical mesh, clip, clamp or band including connector elements for hollow body organs and nerve endings; subclass 159 for blood vessel or duct cutter, scraper or abrader; subclass 161 for optic scraper or abrader; subclass 167 for cutting, punching or piercing surgical tools; subclass 191 for internal pressure applicator(e.g., dilator, etc.).
- 607, Surgery, subclass 1 for light, thermal or electrical application devices; subclass 96 for thermal applicators; subclass 115 for electrical energy applicators.
- 901, Robots, appropriate subclasses for robot mechanism.
- 13.11 Ligament or tendon:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist either:(a)a band of tissue which joins bones, cartilage or supports an organ, fascia or muscle, i.e., an artificial ligament; or (b)a band of tissue which connects a muscle to a bone, i.e., an artificial tendon.
- 13.12 For knee:**
This subclass is indented under subclass 13.11. Subject matter wherein the artificial ligament or tendon is adapted to join knee bones together.
- 13.13 Including tension adjusting means:**
This subclass is indented under subclass 13.11. Subject matter including a means adapted to alter the tautness of the artificial ligament or tendon.
- 13.14 Including ligament anchor means:**
This subclass is indented under subclass 13.11. Subject matter including a means adapted to secure the artificial ligament or tendon to a structure.
- 13.15 Including an outer sheath:**
This subclass is indented under subclass 13.11. Subject matter wherein the artificial ligament or tendon includes an outer covering means.
- 13.16 Removable:**
This subclass is indented under subclass 13.15. Subject matter wherein the outer covering means is detachable from the artificial ligament or tendon.
- 13.17 Including natural tissue:**
This subclass is indented under subclass 13.11. Subject matter wherein the artificial ligament or tendon includes an aggregation of living cells.
- 13.18 Including bio-absorbable material:**
This subclass is indented under subclass 13.11. Subject matter wherein the artificial ligament or tendon includes a material adapted to be dissolved in surrounding living tissues.
- 13.19 In braided form:**
This subclass is indented under subclass 13.11. Subject matter wherein the artificial ligament or tendon is an elongated member made from interweaving three or more strands of fiber together.

- 13.2 Made from plural strands:**
This subclass is indented under subclass 13.11. Subject matter wherein artificial ligament or tendon is an elongated member made from plurality of thread-like elements.
- 14.11 Vocal cord:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist either of a pair of folds of tissue covered by a mucous membrane in a natural larynx, i.e., an artificial vocal cord.
- 14.12 Meniscus:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist a cushioning tissue means between opposed surfaces of a damaged joint bones, i.e., an artificial meniscus.
- 14.13 Muscle (e.g., sphincter, etc.):**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist a contractile organ composed of tissues capable of contracting and relaxing when stimulated to change its length and effect movement of a body part, i.e., an artificial muscle.
- SEE OR SEARCH CLASS:
600, Surgery, subclass 36 for method of making blood vessel or graft; subclass 29 for artificial sphincters which are used in addition to an existing sphincter type muscle or in a location where no such muscle normally exists.
- 15.11 Hair or skin:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist a thread-like outgrowth of an epidermis of a human body, i.e., an artificial hair; or an outermost external covering of a human body, i.e., an artificial skin.
- 15.12 Skin:**
This subclass is indented under subclass 15.11. Subject matter wherein the artificial substitute or part is an artificial skin.
- 16.11 Bone:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist a component of the skeleton of a living body, i.e., an artificial bone or a part thereof.
- 17.11 Spinebone:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or a part thereof is adapted to replace or assist a bone of a natural vertebral column of a living body, i.e., an artificial vertebra or part thereof.
- 17.12 Having a fluid filled chamber:**
This subclass is indented under subclass 17.11. Subject matter wherein the artificial vertebra or part thereof includes an enclosed space adapted for holding a gas or liquid.
- 17.13 Having a spring:**
This subclass is indented under subclass 17.11. Subject matter wherein the artificial vertebra or part thereof includes an elastic body capable of recovering its shape after being compressed, bent, or stretched.
- 17.14 Having a ball and socket means:**
This subclass is indented under subclass 17.11. Subject matter wherein the artificial vertebra or part thereof includes a first approximately spherical member adapted to fit and move within an approximately spherical cavity of a second member.
- 17.15 Having opposed bone-plates which move relative to one another:**
This subclass is indented under subclass 17.11. Subject matter wherein the artificial vertebra or part thereof includes two disc members attached to adjacent vertebra and adapted to move with respect to each other.
- 17.16 Having spinal disc spacer between adjacent spine bones:**
This subclass is indented under subclass 17.11. Subject matter wherein the artificial vertebra or part thereof includes a cushioning spacer means adapted to replace or assist a natural intervertebral disc between adjacent vertebrae.

- 17.17 Jaw bone:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or a part thereof is adapted to replace or assist either of two bones forming the skeleton of the mouth of a natural vertebrae: the upper jaw, the lower jaw, i.e., an artificial jaw bone or part thereof.
- 17.18 Facial bone:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or a part thereof is adapted to replace or assist a natural bone on a face, i.e., an artificial facial bone or part thereof.
- 17.19 Skull bone:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or a part thereof is adapted to replace or assist the bony part of a natural vertebrae head which forms the natural cranium and face, i.e., an artificial skull bone or part thereof.
- 18.11 Joint bone:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or a part thereof is adapted to replace or assist a natural bone junction between two or more relative movable bones, i.e., an artificial joint bone or part thereof.
- 18.12 With magnet:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof includes a magnetic means capable of attracting ferromagnetic material.
- 19.11 Shoulder joint bone:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist a joint area between an upper arm and a trunk of a living body, i.e., an artificial shoulder joint bone or part thereof.
- 19.12 Ball and socket joint:**
This subclass is indented under subclass 19.11. Subject matter wherein the artificial shoulder joint bone or part thereof includes a first approximately spherical member adapted to fit and move within an approximately spherical cavity of a second member.
- 19.13 Humeral and glenoid bones:**
This subclass is indented under subclass 19.11. Subject matter wherein the artificial shoulder joint bone or part thereof includes a first artificial bone adapted to replace or assist a bone of an upper arm; and a second artificial bone adapted for attachment to a glenoid surface of a scapula bone, i.e., an artificial humeral and glenoid bones or part thereof.
- 19.14 Humeral bone:**
This subclass is indented under subclass 19.11. Subject matter wherein the artificial shoulder joint bone or part thereof is adapted to replace or assist the bone of an upper arm, i.e., an artificial humerus bone or part thereof.
- 20.11 Elbow joint bone:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist the common junction of an ulna and a humerus bones of a living body, i.e., an artificial elbow joint bone or part thereof.
- 20.12 Constrained joint:**
This subclass is indented under subclass 20.11. Subject matter wherein the artificial elbow joint bone or part thereof includes an artificial ulna bone or part thereof pivotally locked to an artificial humerus bone or part thereof.
- 20.13 Semi-constrained joint:**
This subclass is indented under subclass 20.11. Subject matter wherein the artificial elbow joint bone or part thereof includes an artificial ulna bone or part thereof detachably and pivotally connected to an artificial humerus bone or part thereof.
- 20.14 Knee joint bone:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone is adapted to replace or assist the common junction of a tibia, fibia and patella, i.e., an artificial knee joint bone or part thereof.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
27, for an artificial leg structure.

- 20.15 Modular type:**
This subclass is indented under subclass 20.14. Subject matter wherein the artificial knee joint bone or part thereof includes separable components which is interchangeable with one another for assembly into units of different size, complexity or function.
- 20.16 Including bone augmentative means:**
This subclass is indented under subclass 20.14. Subject matter including a means (e.g., wedge, block, etc.) adapted to fill in and assist a defective part of the artificial knee joint bone or part thereof.
- 20.17 Including in- growth tissue promoting means:**
This subclass is indented under subclass 20.14. Subject matter wherein the artificial knee joint bone or a part thereof includes means adapted to encourage the development of natural cells and cell products.
- 20.18 Patellarbone:**
This subclass is indented under subclass 20.14. Subject matter wherein the artificial knee joint bone or part thereof is adapted to replace or assist the natural patella bone, i.e., an artificial patella bone or part thereof.
- 20.19 And a member secured to femoral bone:**
This subclass is indented under subclass 20.18. Subject matter further including a means adapted to connect to a femur bone.
- 20.2 Patellarmade of two connected pieces:**
This subclass is indented under subclass 20.18. Subject matter wherein the artificial patella bone or part thereof includes two elements joined together.
- 20.21 Having members secured to femoral and tibial bones:**
This subclass is indented under subclass 20.14. Subject matter wherein the artificial knee joint bone or part thereof includes two members adapted for connection to respective femur and tibia bones, i.e., artificial femur and tibial bones or part thereof.
- 20.22 Ball and socket joint:**
This subclass is indented under subclass 20.21. Subject matter wherein artificial femur and tibial bones or part thereof includes a first artificial member having an approximately spherical ball end; and a second artificial member having an approximately spherical cavity adapted to receive the approximately spherical ball end.
- 20.23 Including roller bearing:**
This subclass is indented under subclass 20.21. Subject matter wherein the artificial femur and tibial bones or part thereof includes a movable supporting spherical member adapted to provide rotational movement.
- 20.24 Constrained joint:**
This subclass is indented under subclass 20.21. Subject matter wherein the artificial femur and tibial bones are pivotally locked together.
- 20.25 Including telescoping means:**
This subclass is indented under subclass 20.24. Subject matter including tubular members which slide one within another.
- 20.26 Including means to permit lateral rocking movement about a horizontal axis:**
This subclass is indented under subclass 20.24. Subject matter including a means adapted to allow either the artificial femur bone or the artificial tibial bone to move from one side of an artificial knee joint to the other (i.e., from media to lateral side or from lateral to media side of a natural knee) about an axis perpendicular to a longitudinal axis of a natural femur or tibia bone.
- 20.27 Including cam means to limit anterior or posterior movement:**
This subclass is indented under subclass 20.21. Subject matter including a mechanism having a cam surface and a cam follower adapted to prevent anterior or posterior dislocation of the artificial femur and tibial bones relative to each other.
- 20.28 Including an intermediate member:**
This subclass is indented under subclass 20.21. Subject matter wherein the artificial femur and tibial bones includes a member disposed between the femur and tibial bones.
- 20.29 Movable:**
This subclass is indented under subclass 20.28. Subject matter wherein the member disposed between the femur and tibial bones is adapted

- to move relative to the femur and tibial members.
- 20.3 Unicondylar:**
This subclass is indented under subclass 20.21. Subject matter wherein the artificial femur and tibial bones includes only one condyle bearing surface(i.e., either media or lateral condyle).
- 20.31 Including lateral and medial condyles:**
This subclass is indented under subclass 20.21. Subject matter wherein the artificial femur and tibial bones includes lateral and medial condylar bearing surfaces.
- 20.32 Tibial bone:**
This subclass is indented under subclass 20.14. Subject matter wherein the artificial knee joint bone or part thereof is adapted to replace or assist a natural tibial bone, i.e., an artificial tibial bone or part thereof.
- 20.33 Movable bearing:**
This subclass is indented under subclass 20.32. Subject matter wherein the artificial tibial bone or part thereof includes a movable support means adapted to move relative to the artificial tibial bone or part thereof.
- 20.34 Tibial stem structure:**
This subclass is indented under subclass 20.32. Subject matter wherein the artificial tibial bone or part thereof is adapted to replace or assist an elongated vertical member of a natural tibial bone, i.e., an artificial tibial stem or part thereof.
- 20.35 Femoral bone:**
This subclass is indented under subclass 20.32. Subject matter wherein the artificial knee joint bone or part thereof is adapted to replace or assist a natural femur bone, i.e., an artificial femur bone or part thereof.
- 20.36 Femoral stem structure:**
This subclass is indented under subclass 20.35. Subject matter wherein the artificial femur bone or part thereof is adapted to replace or assist a vertical elongated member of a natural femur bone, i.e., an artificial femur stem or part thereof.
- 21.11 Wrist, hand (e.g., finger, etc.):**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist either: (a) a system of bones forming the junction between a hand and a forearm, i.e., an artificial wrist bone or part thereof; or (b) the bones of the terminal part of an arm, i.e., an artificial hand bone or part thereof; or (c) a system of bones forming the junction between a foot and a lower leg, i.e., an artificial ankle bone or part thereof; or (d) the bones of the terminal part of a leg, i.e., an artificial foot bone or part thereof.
- 21.12 Wrist bone:**
This subclass is indented under subclass 21.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist a system of bones forming the junction between a hand and a forearm, i.e., an artificial wrist bone or part thereof.
- 21.13 Ball and socket joint:**
This subclass is indented under subclass 21.12. Subject matter wherein the artificial wrist bone or part thereof includes a first artificial member having an approximately spherical ball end; and a second artificial member having an approximately spherical cavity adapted to receive the approximately spherical ball end.
- 21.14 Lunate or scaphoid bone:**
This subclass is indented under subclass 21.12. Subject matter wherein the artificial wrist bone or part thereof is adapted to replace or assist the lunate or scaphoid bone of a natural wrist, i.e., an artificial lunate or scaphoid bone or part thereof.
- 21.15 Finger bone:**
This subclass is indented under subclass 21.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist one of the bones of the digits on a hand, i.e., an artificial finger bone or part thereof.
- 21.16 Ball and socket joint:**
This subclass is indented under subclass 21.15. Subject matter wherein the artificial finger bone or part thereof includes a first artificial member having an approximately spherical ball end; and a second artificial member having

- an approximately spherical cavity adapted to receive the approximately spherical ball end.
- 21.17 Including an intermediate bearing cup:**
This subclass is indented under subclass 21.15. Subject matter wherein the artificial finger bone or part thereof includes two joined bones and a means to fixedly secure the two joined bones together.
- 21.18 Ankle bone:**
This subclass is indented under subclass 21.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist a system of bones forming the junction between a foot and a lower leg, i.e., an artificial ankle bone or part thereof.
- 21.19 Toe bone:**
This subclass is indented under subclass 21.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist one of the bones of the digits on a foot, i.e., an artificial toe bone or part thereof.
- 22.11 Hip joint bone:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist the bone junction between a pelvis and femur bone of a human body, i.e., an artificial hip joint bone or part thereof.
- 22.12 Combined with surgical tool:**
This subclass is indented under subclass 22.11. Subject matter including a device for assisting in implanting the artificial hip joint bone or part thereof into a living body.
- 22.13 Including lubricating fluid enclosure means:**
This subclass is indented under subclass 22.11. Subject matter including a means adapted to house a lubricating fluid for the artificial hip joint or part thereof.
- 22.14 Including a damping element:**
This subclass is indented under subclass 22.13. Subject matter including a means adapted to absorb forces imposed on the artificial hip joint or a part thereof.
- 22.15 Including acetabular cup and femoral head:**
This subclass is indented under subclass 22.11. Subject matter wherein the artificial hip joint bone or part thereof includes a cup-shaped socket adapted to be attached to a natural acetabulum bone; and a spherical head member adapted to be attached to one end of a femur bone, i.e., artificial acetabular cup and femur head bones.
- 22.16 Including roller bearing:**
This subclass is indented under subclass 22.15. Subject matter wherein the artificial acetabular cup and femur head bones includes a movable supporting spherical member adapted to provide rotational movement.
- 22.17 Including an intermediate bearing cup:**
This subclass is indented under subclass 22.15. Subject matter wherein the artificial acetabular cup and femur head bones includes an inner bearing socket member located between the artificial acetabular cup and femur head bones.
- 22.18 Intermediate bearing cup movable with respect to acetabular outer cup:**
This subclass is indented under subclass 22.17. Subject matter wherein the inner bearing socket member is movable relative to the artificial acetabular cup.
- 22.19 Locking element between cups:**
This subclass is indented under subclass 22.17. Subject matter including a means located between the artificial acetabular cup and the inner bearing socket member (e.g., mating elements, retaining ring, snap-fit connection, etc.) adapted to secure the two together.
- 22.2 Retaining ring:**
This subclass is indented under subclass 22.19. Subject matter wherein the means to secure the artificial acetabular cup and the inner bearing socket member together is a circular band.
- 22.21 Acetabular cup:**
This subclass is indented under subclass 22.11. Subject matter wherein the artificial hip joint bone or part thereof is a cup member adapted to be attached to a natural acetabulum bone, i.e., an artificial acetabular cup.
- 22.22 Oblong:**
This subclass is indented under subclass 22.21. Subject matter wherein the artificial acetabular cup has an oval shape.

- 22.23 Interfitted into a prepared natural acetabulum by force fitting:**
This subclass is indented under subclass 22.21. Subject matter wherein the artificial acetabular cup and the natural acetabulum are shaped to be interfitted inside one another by snap-fitting.
- 22.24 And an insert liner cup:**
This subclass is indented under subclass 22.21. Subject matter wherein the artificial acetabular cup includes an acetabular outer cup and an inner bearing cup adapted to fit inside an inner surface of the acetabular outer cup.
- 22.25 Adjustable insert liner cup:**
This subclass is indented under subclass 22.24. Subject matter including a means to permit adjustment of relative positions between the inner bearing cup and the acetabular outer cup.
- 22.26 One cup includes flexible wall:**
This subclass is indented under subclass 22.24. Subject matter wherein a wall of the acetabular outer or inner bearing cup is provided with means adapted to allow expansion or contraction of the cup.
- 22.27 Circumferentially threaded acetabular outer cup:**
This subclass is indented under subclass 22.24. Subject matter wherein the artificial acetabular cup has a thread extending around its circumference.
- 22.28 Including locking means between cups:**
This subclass is indented under subclass 22.24. Subject matter including a means to secure the acetabular outer and inner bearing cups together.
- 22.29 Locking ring:**
This subclass is indented under subclass 22.28. Subject matter wherein the securing means is an annular retaining band.
- 22.3 Having flexible wall:**
This subclass is indented under subclass 22.21. Subject matter wherein a wall of the artificial acetabular cup is provided with means adapted to allow expansion or contraction of the acetabular cup.
- 22.31 Acetabular cup outer surface is circumferentially threaded:**
This subclass is indented under subclass 22.21. Subject matter wherein an outer surface of the artificial acetabular cup has a thread extending around its circumference.
- 22.32 Acetabular cup outer surface includes integral anchoring means:**
This subclass is indented under subclass 22.21. Subject matter wherein an outside surface of the artificial acetabular cup is provided with built-in securing means adapted for attachment of the artificial acetabular cup to a natural acetabulum bone.
- 22.33 Mesh outer surface:**
This subclass is indented under subclass 22.21. Subject matter wherein an outer surface of the artificial acetabular cup is provided with a net-like structure.
- 22.34 Cup includes closure means for closing anchoring hole means:**
This subclass is indented under subclass 22.21. Subject matter wherein the artificial acetabular cup is provided with an opening adapted for a securing means to extend therethrough; and a means to seal the opening.
- 22.35 Acetabular cup includes cut-through hole to receive protruding anchoring means:**
This subclass is indented under subclass 22.21. Subject matter wherein the artificial acetabular cup is provided with an aperture adapted for a securing means to extend therethrough.
- 22.36 Screw anchoring means:**
This subclass is indented under subclass 22.35. Subject matter wherein the securing means is a threaded pin.
- 22.37 Pin anchoring means:**
This subclass is indented under subclass 22.35. Subject matter wherein the securing means is a peg member.
- 22.38 Outer surface of cup includes protruding means:**
This subclass is indented under subclass 22.21. Subject matter wherein an outer surface of the artificial acetabular cup includes a projecting means.

22.39 Cup secured to acetabulum bone by cement:

This subclass is indented under subclass 22.21. Subject matter wherein the artificial acetabular cup is attached to a natural acetabulum bone by an adhesive substance.

22.4 Total femoral bone (i.e., including joint head and femoral stem):

This subclass is indented under subclass 22.11. Subject matter wherein the artificial hip joint bone or part thereof is adapted to replace or assist a femur bone having a femur stem, and a femur joint head, i.e., an artificial femur bone or part thereof.

22.41 Set of plural femoral securement members:

This subclass is indented under subclass 22.40. Subject matter including a plurality of artificial femur bones.

22.42 Modular type:

This subclass is indented under subclass 22.40. Subject matter wherein artificial femur bone or part thereof includes separable components which are interchangeable with one another for assembly into units of different sizes, complexity or functions.

22.43 Stem includes protruding means projecting into a bore in joint head:

This subclass is indented under subclass 22.40. Subject matter wherein the femur stem includes a projection means adapted to extend into a socket in the femur joint head.

22.44 Bore in neck area of joint head:

This subclass is indented under subclass 22.43. Subject matter wherein the socket is in a neck area of the femur joint head.

22.45 Including an intermediate coupler between joint head and protruding means:

This subclass is indented under subclass 22.43. Subject matter including a member disposed between the socket and the projection means adapted to connect the femur joint head and the femur stem.

22.46 Including protruding means projects into a bore in femoral stem or femoral neck:

This subclass is indented under subclass 22.40. Subject matter wherein the artificial femur bone or part thereof includes a neck area dis-

posed between the femur joint head and the femur stem; and a projecting means adapted to extend into a socket in the femur stem or neck area.

23.11 Femoral joint head:

This subclass is indented under subclass 22.11. Subject matter wherein the artificial hip joint bone or part thereof is adapted to replace or assist a natural femur joint head bone or part thereof, i.e., an artificial femur joint head bone or part thereof.

SEE OR SEARCH CLASS:

606, Surgery, subclass 89 for femoral head repair means.

23.12 Femoral joint head cap:

This subclass is indented under subclass 23.11. Subject matter wherein the artificial femur joint head bone or part thereof is a cup-shaped member adapted for covering a ball-end of a femur joint head bone.

23.13 Including an inner shell:

This subclass is indented under subclass 23.12. Subject matter wherein the cup-shaped member includes an intermediate cup disposed between the cup-shaped member and the ball-end part of the femur joint head bone.

23.14 Including neck anchoring means:

This subclass is indented under subclass 23.12. Subject matter wherein the cup-shaped member includes a means adapted to secure the cup-shaped member to a neck area of a femur bone.

23.15 Femoral stem:

This subclass is indented under subclass 23.11. Subject matter wherein the artificial hip joint bone or part thereof is adapted to replace or assist a stem of a natural femur bone, i.e. an artificial femur stem or part thereof.

23.16 Having electrical means:

This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem or part thereof includes a means actuated by electricity.

23.17 Having shock absorbing means:

This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur

- stem or part thereof includes a means adapted to dissipate an applied force or vibration.
- 23.18 Multi-stem:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem or part thereof includes plural elongated support shafts.
- 23.19 Having a cement channel:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem or part thereof includes an elongate bore adapted to be filled by a cement substance.
- 23.2 And cement seal means:**
This subclass is indented under subclass 23.19. Subject matter including a means adapted to prevent the cement substance from leaking.
- 23.21 Having a collar:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem or part thereof includes a ridge extending around a neck area of the artificial femur stem.
- 23.22 Removable collar:**
This subclass is indented under subclass 23.21. Subject matter wherein ridge is detachable from the artificial femur stem.
- 23.23 Having intramedullary:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem or part thereof is provided with a covering sheath adapted for enveloping the artificial femur stem or part thereof.
- 23.24 Having a stepped surface:**
This subclass is indented under subclass 23.15. Subject matter wherein a surface of the artificial femur stem is provided with grooves forming a zig-zag patterned surface.
- 23.25 Having integral spacer:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem includes a built-in protruding means adapted to establish a space distance between the artificial femur stem and a natural intramedullary canal.
- 23.26 Having anchoring means to attach artificial femoral stem to natural femoral bone:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem includes a means to secure the artificial femur stem to a natural femur bone.
- 23.27 Screw anchoring means:**
This subclass is indented under subclass 23.26. Subject matter wherein the securing means is a threaded pin.
- 23.28 Having augmentative means:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem includes a means (e.g., wedge, block, etc.) adapted to fill in and assist a defective part of the artificial femur stem.
- 23.29 Having textured outer surface:**
This subclass is indented under subclass 23.15. Subject matter wherein an outside surface of the artificial femur stem is provided with means adapted for forming a non-smooth outside surface.
- 23.3 Porous:**
This subclass is indented under subclass 23.29. Subject matter wherein the outside surface of the artificial femur stem includes pores.
- 23.31 Ridges:**
This subclass is indented under subclass 23.29. Subject matter wherein the outside surface of the artificial femur stem includes raised structures.
- 23.32 Having variable stiffness:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem or a part thereof includes areas each has different degree of hardness.
- 23.33 Hollowed stem:**
This subclass is indented under subclass 23.32. Subject matter wherein the artificial femur stem or part thereof includes an elongated cavity.
- 23.34 Composite stem:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur

- stem is a combination of various layers or parts made from various types of material.
- 23.35 Having particular geometry:**
This subclass is indented under subclass 23.15. Subject matter wherein the artificial femur stem or a part thereof has a specific configuration.
- 23.36 Coating surface:**
This subclass is indented under subclass 23.15. Subject matter wherein an outer surface of the artificial femur stem is provided with a covering layer.
- 23.37 Cement coating:**
This subclass is indented under subclass 23.36. Subject matter wherein the covering layer is an adhesive substance.
- 23.38 Polished:**
This subclass is indented under subclass 23.15. Subject matter wherein a surface of the artificial femur stem is prepared to have a smooth appearance.
- 23.39 Total joint bone (i.e., including two connected joint bones):**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist two natural joint bones, i.e., artificial joint bones.
- 23.4 Ball and socket joint:**
This subclass is indented under subclass 23.39. Subject matter wherein the artificial joint bones includes a first artificial bone member having a spherical ball at an end; and a second artificial bone member having a spherical cavity adapted to receive the approximately spherical ball.
- 23.41 Including intermediate elastic joint component connecting two joint bones:**
This subclass is indented under subclass 23.39. Subject matter wherein the artificial joint bones are connected by a resilient element.
- 23.42 Joint head bone:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist a ball-end of a joint bone.
- 23.43 Cup-shaped:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof includes a socket means.
- 23.44 Stem structure:**
This subclass is indented under subclass 18.11. Subject matter wherein the artificial joint bone or part thereof is adapted to replace or assist an elongated support shaft of a joint bone.
- 23.45 Adjustable length:**
This subclass is indented under subclass 18.11. Subject matter wherein the elongated support shaft includes a means to alter its longitudinal dimension.
- 23.46 Including sleeve around stem member:**
This subclass is indented under subclass 23.44. Subject matter wherein the elongated support shaft is enclosed by a sheath means.
- 23.47 Adjustable:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or a part thereof includes a means for adjusting a dimension of the artificial bone.
- 23.48 Cement bone plug or bone canal positioning means:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or part thereof includes a closure means adapted to restrict the flow of an adhesive substance beyond a predetermined point; or a means adapted to position the artificial bone into a bone canal in a natural bone.
- 23.49 Including electrical means to induce bone growth:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or part thereof includes an electrical means to promote ingrowth living bone tissue.
- 23.5 Having textured outer surface:**
This subclass is indented under subclass 16.11. Subject matter wherein an outside surface of the artificial bone or part thereof includes a means (e.g., holes, grooves, slots, ridges, etc.) adapted to form a non-smooth outside surface.

- 23.51 Composite bone:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or part thereof is a combination of various layers or parts made from various types of material.
- 23.52 Including an outer sheath:**
This subclass is indented under subclass 16.11. Subject matter wherein an outside surface of the artificial bone or part thereof is enclosed with a covering means.
- 23.53 Made of metal:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or part thereof includes structure made from a metal substance.
- 23.54 Wire mesh:**
This subclass is indented under subclass 23.53. Subject matter wherein the structure is a sheet of interlocked metal fibers.
- 23.55 Including a porous outer surface:**
This subclass is indented under subclass 23.53. Subject matter wherein an outside surface of the artificial bone or part thereof includes pores.
- 23.56 Ceramic:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or part thereof includes a structure made from a material which contains a ceramic substance.
- 23.57 Including bioactive coating:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or a portion thereof includes an outer layer made of a substance capable of promoting ingrowth living bone tissue.
- 23.58 Polymers:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or part thereof includes a structure made from a material which contains a polymeric component.
- 23.59 Polymer coating:**
This subclass is indented under subclass 23.58. Subject matter wherein the artificial bone or part thereof includes an outer covering layer made from the material which contains a polymeric component.
- 23.6 Bone surface coating:**
This subclass is indented under subclass 16.11. Subject matter wherein a surface of the artificial bone or a portion thereof is covered with a particular substance.
- 23.61 Bone composition:**
This subclass is indented under subclass 16.11. Subject matter wherein the artificial bone or part thereof is made from specific combined elements.
- 23.62 Cement:**
This subclass is indented under subclass 23.61. Subject matter wherein the specific combined elements forms an adhesive substance.
- 23.63 Including natural bone tissue:**
This subclass is indented under subclass 23.61. Subject matter wherein the specific combined elements includes living cells from a natural bone.
- 23.64 Hollow tubular part or organ (e.g., bladder, urethra, bronchi, bile duct, etc.):**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist either: (a) a member having an elongated cylinder form (e.g., tube-like duct, etc.) for handling body fluids; or (b) a differentiated body structure composed of various cells or tissues having a space cavity and a specific body function, i.e., an artificial organ.
- SEE OR SEARCH CLASS:
- 8, Bleaching and Dyeing: Fluid Treatment and Chemical Modification of Textiles and Fibers, subclass 94.1R+ for treatment of hides, skins, feathers and animal tissues.
- 137, Fluid Handling, appropriate subclasses for valves.
- 251, Valves and Valve Actuation, appropriate subclasses for valves with activating means.
- 604, Surgery, appropriate subclasses for methods and apparatus which involves the application, storing, col-

- lecting, introduction, or removal of material from a body; subclass 8 for shunts; subclass 93 for implantable reservoir inserted in a body; subclass 264 for body inserted tubular conduit structure to introduce or remove material into or from a body.
- 606, Surgery, appropriate subclasses for surgical instruments; subclass 108 for means for inserting or removing conduit within a body; subclass 151 for surgical mesh, clip, clamp or band including connector elements for hollow body organs and nerve endings; subclasses 159 for blood vessel or duct cutter, scraper or abrader.
- 23.65 Bladder, kidney, lung, or stomach:**
This subclass is indented under subclass 23.64. Subject matter wherein the artificial substitute or part is adapted to replace or assist either: (a) a saclike structure adapted to contain a gas or receive a body fluid, i.e., an artificial bladder); or (b) a body member adapted to eliminate water and waste products, i.e., an artificial kidney; or (c) an air-filled sac adapted to function as an organ of respiration, i.e., an artificial lung; or (d) a saclike organ of the vertebrate digestive system located between the esophagus and the intestine adapted for temporary food storage and for the preliminary stages of food breakdown, i.e., an artificial stomach.
- 23.66 Urethra:**
This subclass is indented under subclass 23.64. Subject matter wherein the artificial substitute or part is adapted to replace or assist a canal member through which urine is discharged from a natural urinary bladder to the outside of a natural body, i.e., an artificial urethra or part thereof.
- 23.67 Inflatable:**
This subclass is indented under subclass 23.64. Subject matter wherein the artificial substitute or part is expandable by a fluid.
- 23.68 Including a valve:**
This subclass is indented under subclass 23.64. Subject matter wherein the artificial substitute or part includes a device for controlling the flow of a fluid.
- 23.69 Helical:**
This subclass is indented under subclass 23.64. Subject matter wherein the artificial substitute or part includes a helix structure.
- 23.7 Stent:**
This subclass is indented under subclass 23.64. Subject matter wherein the artificial substitute or part has a support frame.
- 23.71 Material characteristic:**
This subclass is indented under subclass 23.64. Subject matter wherein the artificial substitute or part is made from a named material.
- 23.72 Tissue:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part is adapted to replace or assist a natural tissue, i.e., an artificial tissue member or part thereof.
- 23.73 Having micro particles:**
This subclass is indented under subclass 23.72. Subject matter wherein the artificial tissue member includes tiny granular elements (e.g., pellets, powder particles, etc.).
- 23.74 Having textured surface:**
This subclass is indented under subclass 23.72. Subject matter wherein a surface of the artificial tissue member is provided with means to form a rough surface.
- 23.75 Having bio-absorbable component:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part includes a structure made from a material capable of dissolving in its surrounding living tissues.
- 23.76 Having means to promote cellular attachment:**
This subclass is indented under subclass 11.11. Subject matter wherein the artificial substitute or part includes a means adapted to encourage living tissue to grow and adhere to the artificial substitute or part.
- 24 HAVING ELECTRICAL ACTUATOR:**
This subclass is indented under the class definition. Subject matter provided with means which uses electrical energy to initiate or pro-

duce an intended effect or function of a prosthetic member.

- (1) Note. This subclass provides for artificial body members having electrical actuators while those having fluid actuators are provided for in subclass 26. In addition, other types of artificial body members having solely mechanical actuators are provided for in lower subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 26, for prosthesis devices having fluid actuators.
 30, for leg prosthetic devices having mechanical actuators initiated by torso movement.
 40+, for combined knee and foot prosthetic devices having mechanical actuators.
 50+, for ankle prosthetic devices having mechanical actuators.
 57+, for arm or component prosthetic devices having mechanical actuators.

25 Bioelectrical (e.g., myoelectric, etc.):

This subclass is indented under subclass 24. Subject matter which uses electrical or electromotive properties of living tissue to produce electrical energy used in operating or regulating a prosthetic member.

- (1) Note. Typically, a myoelectrical muscle or nerve tissue is used to produce an intended effect or function.

26 HAVING FLUID ACTUATOR:

This subclass is indented under the class definition. Subject matter provided with means which uses fluid energy to initiate or produce an intended effect or function of a prosthetic member.

- (1) Note. This subclass provides for artificial body members having fluid actuators. In addition, other types of artificial body members having solely mechanical actuators are provided for in lower subclasses.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 30, for leg prosthetic devices having mechanical actuators initiated by torso movement.
 40+, for combined knee and foot prosthetic devices having mechanical actuators.
 50+, for ankle prosthetic devices having mechanical actuators.
 57+, for arm or component prosthetic devices having mechanical actuators.

27 LEG:

This subclass is indented under the class definition. Subject matter manufactured or adapted to replace or assist a missing or defective lower limb of a human body.

28 Extension:

This subclass is indented under subclass 27. Subject matter attached to some part of a leg and supporting a natural foot, thereby increasing the length of a leg.

- (1) Note. This subclass includes stilts attached to the body.

SEE OR SEARCH CLASS:

- 482, Exercise Devices, particularly subclasses 75+ for other types of stilts not attached to a user.

29 Foot covering or support:

This subclass is indented under subclass 28. Subject matter which is (a) attached only to a covering of the terminal part of a human leg, i.e., a foot; or (b) comprised of a covering modified to conform to a deformed foot; or (c) able to raise a foot supporting surface by addition of a foot tread.

- (1) Note. This subclass also includes foot prosthesis modified to conform to a deformed foot and inserted within the foot covering.
 (2) Note. The prosthesis classified here are so related to the foot that upon removal of the foot from the shoe the prosthesis is removed from the shoe with the foot.

- SEE OR SEARCH CLASS:
36, Boots, Shoes, and Leggings, subclass 140 for devices accommodating shoes to foot deformities and remaining in the shoe upon removal of the shoe from the foot.
- 30 Torso actuated or controlled:**
This subclass is indented under subclass 27. Subject matter in which a trunk of a human body is used to actuate or control a leg.
- 31 Torso attachment:**
This subclass is indented under subclass 27. Subject matter comprising means for attaching or suspending an artificial leg to or from a torso.
- SEE OR SEARCH CLASS:
2, Apparel, subclasses 300 through 342 for garment suspenders.
119, Animal Husbandry, subclasses 712+ for a harness for controlling or handling an animal, subclasses 850+ for a protective shield or apparel, and subclasses 856+ for a body- or appendage-encircling collar or band.
- 32 Suspender or attachment from natural leg:**
This subclass is indented under subclass 27. Subject matter manufactured or adapted for engaging a leg, or for attaching or suspending an artificial limb from a leg.
- 33 Socket holder:**
This subclass is indented under subclass 27. Subject matter having a holder provided with a hollow opening for receiving a stump of a natural leg.
- 34 Suction type:**
This subclass is indented under subclass 33. Subject matter in which the holder uses a suction force for holding or retaining the stump.
- 35 Yieldable mounted:**
This subclass is indented under subclass 33. Subject matter in which a socket holder has an artificial limb connection which is yieldably responsive to the weight of a person wearing the artificial limb.
- 36 Cushioning means (e.g., pad or liner, etc.):**
This subclass is indented under subclass 33. Subject matter for padding the stump engaging portion of the holder.
- 37 Fluid:**
This subclass is indented under subclass 36. Subject matter which uses a fluid as the padding medium.
- 38 Adjustable shank or thigh:**
This subclass is indented under subclass 27. Subject matter in which leg elements are expandably or longitudinally adjustable, or may be secured in an adjusted position.
- 39 Knee:**
This subclass is indented under subclass 27. Subject matter manufactured or adapted to replace or assists the joint between an upper and a lower leg bone of a human body.
- 40 Combined knee and foot actuator:**
This subclass is indented under subclass 39. Subject matter having means to actuate both a knee prosthesis and a prosthesis for the terminal portion of a human leg, i.e., a foot.
- 41 Latch:**
This subclass is indented under subclass 40. Subject matter provided with a locking mechanism.
- 42 Spring:**
This subclass is indented under subclass 40. Subject matter provided with an elastic device which regains its original shape after being compressed or expanded.
- 43 Brake or latch:**
This subclass is indented under subclass 39. Subject matter provided with either: (a) a device for stopping or slowing motion by frictional contact, i.e., a brake; or (b) a locking mechanism.
- SEE OR SEARCH CLASS:
188, Brakes, pertinent subclasses for details of brakes of general utility.

- 44 Weight or Position Responsive:**
This subclass is indented under subclass 43. Subject matter which is actuated in response to either the weight of a wearer or a position of an artificial limb.
- 45 Adjustable friction joint:**
This subclass is indented under subclass 43. Subject matter wherein the joint is provided with variable friction means for controlling the action of a prosthesis.
- 46 Spring:**
This subclass is indented under subclass 39. Subject matter having an elastic device which regains its original shape after being compressed or expanded.
- 47 Ankle:**
This subclass is indented under subclass 27. Subject matter designed or adapted to replace or assist the system of bones forming the junction between a lower leg and a foot.
- 48 Universal joint:**
This subclass is indented under subclass 47. Subject matter having a joint or coupling allowing an ankle prosthesis to rotate through 360 degrees.
- 49 Resilient:**
This subclass is indented under subclass 48. Subject matter in which the joint or coupling includes means capable of regaining its original shape after distortion.
- 50 Resiliently actuated or controlled:**
This subclass is indented under subclass 47. Subject matter having resilient means causing or modifying the movement of an ankle prosthesis.
- 51 Elastic cord:**
This subclass is indented under subclass 50. Subject matter having a string of relatively thin rope composed of material which regains its original shape when stretched or pulled.
- 52 Spring:**
This subclass is indented under subclass 50. Subject matter having an elastic device which regains its original shape after being compressed or expanded.
- 53 Foot:**
This subclass is indented under subclass 27. Subject matter manufactured or adapted to replace or assist a terminal part of a lower limb of a human body.
- 54 Toe:**
This subclass is indented under subclass 53. Subject matter adapted to replace or assist a digit of a foot of a human body.
- 55 Resilient:**
This subclass is indented under subclass 53. Subject matter containing means which can regain its original shape after distortion.
- (1) Note. Generally, the resilient means of this subclass comprises felt or rubber used in or during the construction of an artificial foot.
- 56 Fluid cushion:**
This subclass is indented under subclass 55. Subject matter in which a resilient means comprises a pad filled with a gas or liquid.
- 57 ARM OR COMPONENT (E.G., ELBOW, WRIST, HAND, FINGER, ETC.), AND ACTUATOR OR CONNECTOR THEREFOR:**
This subclass is indented under the class definition. Subject matter manufactured or adapted to replace or assist an upper limb, or part thereof, of a human body, i.e., an arm, a elbow, hand or finger or the connecting joints, and actuating means or attaching devices for any of the same.
- SEE OR SEARCH CLASS:
2, Apparel, subclass 158 and 159+, for mittens and gloves.
24, Buckles, Buttons, Clasps, etc., subclasses 698.1+ for a hook shaped projection member of a separable-fastener having general utility.
223, Apparel Apparatus, subclasses 78+ for forms in the shape of a hand or part of a hand, such form being a device over which a garment may be fitted and which serves to impart a shape to the garment preventing wrinkling and simulating its appearance

- when worn, and for purposes of storage or display.
- 294, Handling: Hand and Hoist-Line Implements, subclasses 86.4+ for miscellaneous hand and hoist line implements adapted to grasp an article.
- 446, Amusement Devices: Toys, subclasses 330+ for a figure toy having a mechanism to move an arm or hand; subclasses 376+ for joint features; and subclass 390 for other limb, hand or foot features.
- 58 Torso supported and actuated:**
This subclass is indented under subclass 57. Subject matter in which an artificial arm member is provided with a device attaching the member to the trunk of a human body and is provided with means able to actuate the member by the trunk of the human body.
- 59 Elbow:**
This subclass is indented under subclass 57. Subject matter manufactured or adapted to replace or assist a joint between an upper and forearm of a human body.
- 60 With forearm actuation:**
This subclass is indented under subclass 59. Subject matter in which an elbow prosthesis is provided with means to actuate movement of a forearm.
- 61 Wrist:**
This subclass is indented under subclass 57. Subject matter manufactured or adapted to replace or assist the system of bones between a forearm and hand of a human body.
- SEE OR SEARCH CLASS:
279, Chucks or Sockets, appropriate subclasses for holding means of the chuck type.
- 62 With wrist actuation:**
This subclass is indented under subclass 61. Subject matter in which a wrist prosthesis is provided with means to actuate movement of the wrist prosthesis.
- 63 Arm or torso initiated finger actuation:**
This subclass is indented under subclass 57. Subject matter in which an artificial digit of a human hand is provided with means able to actuate the digit wherein such means is supported by an upper limb of a human body, i.e., an arm or the trunk of a human body, i.e., a torso.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
58, for members which are supported by, as well as actuated by, the wearer's torso.
- 64 Finger actuator embodied in simulated hand:**
This subclass is indented under subclass 57. Subject matter in which a prosthesis comprises a replacement or assistant for a terminal part of an upper limb of a human body, i.e., a hand, and further in which the hand is provided with means to actuate a digit of the hand.
- 65 With article or article holder:**
Subject matter under subject 57 in combination with either an article or with means capable of holding an article.
- SEE OR SEARCH CLASS:
24, Buckles, Buttons, Clasps, etc., subclasses 455+ for clasps of more general utility.
279, Chucks or Sockets, appropriate subclasses for article gripping means of the chuck type.
- 66.1 MISCELLANEOUS:**
This subclass is indented under the class definition. Subject matter not classified in the above subclasses.

CROSS-REFERENCE ART COLLECTIONS

The documents in the following collections contain only cross-references which have been placed without regard to their original classification or to their claimed subject matter and are therefore not exhaustive of the art or subject matter but are only examples thereof. consequently, a complete search for art or subject matter provided for here would require a review of the higher portions of the classification schedule.

- 900 STENT FOR HEART VALVE:**
Cross-reference art collection of documents relating to a stent or support for a heart valve.
- 901 METHOD OF MANUFACTURING PROSTHETIC DEVICE:**
Cross-reference collection of documents relating to a process for making an artificial body member.
- 902 METHOD OF IMPLANTING:**
This subclass is indented under the class definition. Cross-reference art collection of documents relating to a surgical process for placing an artificial body member into the body of a person.
- 903 Blood vessel:**
This subclass is indented under subclass 902. Subject matter relating to a surgical process for placing an artificial blood vessel into the body of a person.
- 904 Heart:**
This subclass is indented under subclass 902. Subject matter relating to a surgical process for placing an artificial heart or part thereof into the body of a person.
- 905 Eye:**
This subclass is indented under subclass 902. Subject matter relating to a surgical process for placing an artificial eye or part thereof into the body of a person.
- 906 Corneal:**
This subclass is indented under subclass 905. Subject matter relating to a surgical process for placing an artificial corneal or part thereof into the body of a person.
- 907 Method of manipulating parts of intraocular lens structure for implantation:**
This subclass is indented under subclass 905. Subject matter relating to a surgical process for placing an artificial intraocular lens or part thereof into the body of a person.
- 908 Bone:**
This subclass is indented under subclass 902. Subject matter relating to a surgical process for placing an artificial bone member or part thereof into the body of a person.
- 909 METHOD OR APPARATUS FOR ASSEMBLING PROSTHETIC:**
This subclass is indented under the class definition. Cross-reference art collection of documents relating to an apparatus or a process for connecting parts of an artificial body member together.
- 910 Heart:**
This subclass is indented under subclass 902. Subject matter relating to an apparatus or a process for connecting parts of an artificial heart together.
- 911 Bone:**
This subclass is indented under subclass 902. Subject matter relating to an apparatus or a process for connecting parts of an artificial bone member together.
- 912 METHOD OR APPARATUS FOR MEASURING OR TESTING PROSTHETIC:**
This subclass is indented under the class definition. Cross-reference art collection of documents relating to an apparatus or a process for measuring or testing the artificial body member .
- 913 Heart:**
This subclass is indented under subclass 912. Subject matter relating to an apparatus or a process for measuring or testing an artificial heart.
- 914 Bone:**
This subclass is indented under subclass 912. Subject matter relating to an apparatus or a process for measuring or testing an artificial bone member.
- 915 METHOD OR APPARATUS FOR PREPARING BIOLOGICAL MATERIAL:**
This subclass is indented under the class definition. Cross-reference art collection of documents relating to an apparatus or a process for preparing a natural living tissue before implantation.
- 916 Blood vessel:**
This subclass is indented under subclass 915. Subject matter relating to an apparatus or a process for preparing a natural living tissue before implantation into an artificial blood vessel member.

- 917 Collagen:**
This subclass is indented under subclass 916. Subject matter relating to an apparatus or a process for preparing a collagen living tissue before implantation into an artificial blood vessel member.
- 918 Heart:**
This subclass is indented under subclass 915. Subject matter relating to an apparatus or a process for preparing a natural living tissue before implantation into an artificial heart.
- 919 Bone:**
This subclass is indented under subclass 915. Subject matter relating to an apparatus or a process for preparing a natural living tissue before implantation into an artificial bone member.
- 920 METHOD OR APPARATUS FOR PREPARING OR TREATING PROSTHETIC:**
This subclass is indented under the class definition. Cross-reference art collection of documents relating to an apparatus or a process for preparing or treating an artificial body member before implantation.
- 921 Blood vessel:**
This subclass is indented under subclass 920. Subject matter relating to an apparatus or a process for preparing or treating an artificial blood vessel before implantation.
- 922 Heart:**
This subclass is indented under subclass 920. Subject matter relating to an apparatus or a process for preparing or treating an artificial heart before implantation.
- 923 Bone:**
This subclass is indented under subclass 920. Subject matter relating to an apparatus or a process for preparing or treating an artificial bone member before implantation.
- 924 MATERIAL CHARACTERISTIC:**
This subclass is indented under the class definition. Cross-reference art collection of documents relating to an artificial body member made from a specific type of material.

- 925 Natural:**
This subclass is indented under subclass 924. Subject matter relating to an artificial body member made from a specific type of material which includes a natural living tissue component.
- 926 Synthetic:**
This subclass is indented under subclass 924. Subject matter relating to an artificial body member made from a specific type of material which includes a man-made material component.

FOREIGN ART COLLECTIONS

The definitions below correspond to the abolished subclasses from which these collections were formed. See the Foreign Art Collection schedule of this class for specific correspondences. [Note: The titles and definitions for indented art collections include all the details of the one(s) that are hierarchically superior.]

FOR 100 ARTERIAL PROSTHESIS (E.G., BLOOD VESSEL, ETC.):

Foreign art collection including subject matter manufactured or adapted to replace or assist a missing or defective anatomical duct, canal, or tubular structure which functions to contain and circulate blood within a human body.

FOR 101 HEART VALVE:

Foreign art collection including subject matter manufactured or adapted to replace or assist a defective structure retarding or preventing the flow of blood through a heart.

FOR 102 CORPOREAL ARTIFICIAL HEART, HEART ASSIST (E.G., IMPLANTABLE BLOOD PUMP, ETC.), CONTROL REGULATOR, OR POWER SUPPLY THEREFOR, OR METHOD OF OPERATION THEREFOR:

Foreign art collection including subject matter manufactured or adapted either (a) to replace or assist a defective muscular blood pumping organ of a human body (i.e., an artificial heart), or (b) to aid in the functioning of an artificial heart, or (c) to direct the operation of an artificial heart, or (d) to provide energy to an artificial heart, or (e) for a

process of directing the operation of an artificial heart.

FOR 103 EYE PROSTHESIS (E.G., LENS OR CORNEAL IMPLANT, OR ARTIFICIAL EYE, ETC.):

Foreign art collection including subject matter manufactured or adapted to replace or assist to replace or assist a missing or defective part of a human organ capable of vision or light sensitivity.

FOR 104 Corneal implant:

Foreign art collection including subject matter manufactured or adapted to replace or assist to replace or assist a transparent anterior portion of the tunic of a human eye (i.e., the cornea).

FOR 105 Intraocular lens:

Foreign art collection including subject matter manufactured or adapted to replace or assist a substitute for a natural crystalline lens intended to be implanted or surgically attached to a natural eye as a permanent replacement thereof.

FOR 106 MISCELLANEOUS:

Foreign art collection including subject matter not classified in the above subclasses.

FOR 107 IMPLANTABLE PROSTHESIS:

Foreign art collection for prosthesis manufactured or adapted to be inserted into or grafted to a human body.

FOR 108 Hollow or tubular part or organ (e.g., blad, urether bronchi, bile duct, etc.):

Foreign art collection for subject matter manufactured or adapted to replace or assist either: (a) a natural body organ or part having an unfilled space cavity, or (b) having the form of an elongated cylinder, e.g., tube-like duct for handling body fluids.

FOR 109 Ligament or tendon:

Foreign art collection for subject matter manufactured or adapted to replace or assist either; (a) a defective sheet or band of tissue connecting two or more bones, cartilage or supporting an organ, fascia or mus, i.e., a ligament; or (b) a defective band of tissue connecting a muscle to a bone, i.e., a ten

FOR 110 Muscle (e.g., sphincter, etc.):

Foreign art collection for subject matter manufactured or adapted to replace or assist a defective tissue composed of fibers capable of contracting and relaxing to thereby effect bodily movement.

FOR 111 Hair or skin:

Foreign art collection for subject matter manufactured or adapted to replace or assist either: (a) a cylindrical fila which grows from the epidermis of a human body, i.e., a hair, or (b) a portion of the membranous tissue forming the external cover of a human body, i.e., skin.

FOR 112 Bone prosthesis:

Foreign art collection for subject matter manufactured or adapted to replace or assist a component of the skeleton of a human body, i.e., a bone or a portion thereof.

FOR 113 Spinal column (e.g., vertebra, spinal disc, etc.):

Foreign art collection for subject matter manufactured or adapted to replace or assist a part of the backbone of a human body.

FOR 114 Joint:

Foreign art collection for subject matter wherein a bone portion to be replaced or assisted includes a junction between two or more bones which permits rela movement of the bones.

FOR 115 Shoulder:

Foreign art collection for subject matter manufactured or adapted to replace or assist a defective junction of the arm and trunk of a human body.

FOR 116 Elbow or knee:

Foreign art collection for subject matter manufactured or adapted to replace or assist either: (a) the common junc of a radius, ulna and humerus; or (b) the common junction of a tibia, fibia and patella.

FOR 117 Wrist, hand (e.g., finger, etc.), ankle or foot (e.g., toe, etc.):

Foreign art collection for subject matter manufactured or adapted to replace or assist a defective joint in either: (a) the system of

bones forming the junction between a hand and a forearm, i.e., a wrist; or (b) in the bones of the terminal part of the human arm, i.e., a hand; or (c) in the system of bones forming the junction between a foot and a lower leg, i.e., an ankle, or (d) the bones of the terminal part of a human leg.

FOR 118 Hip:

Foreign art collection for subject matter manufactured or adapted to replace or assist the junction between a pelvis and femur bone, i.e., a hip joint.

FOR 119 Femoral head:

Foreign art collection for subject matter manufactured or adapted to replace or assist the femoral portion of a hip joint, i.e., the prosthesis being connectable to the femur or thigh bone.

END